C.I. E. PUBLICATIONS

Publication No. 47

Summaries of M. Ed. Reports 1958-59

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Central Institute of Education
Delhi
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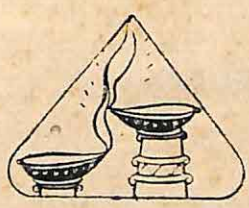

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Delhi

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PRINTED IN INDIA BY THE MANAGER
GOVT OF INDIA PRESS NASIK ROAD 1962

FOREWORD

This volume contains the summaries of the reports submitted by the M. Ed. Students of the year 1958-59 in part fulfilment of requirements of the M. Ed. degree of the University of Delhi.

These summaries were edited by Dr. Sunitee Dut of the Institute.

E. A. PIRES,
Principal,
Central Institute of Education

DELHI-6 :
January, 1961.

CONTENTS

An Investigation into the Social and Ethical Values among Boys in Some Delhi Schools

By C. Warhadpande

Introduction :

One frequently comes across the complaint that our students are becoming increasingly indisciplined day by day. There are also more serious complaints that our standards of integrity in public life are falling and that if this deterioration continues, we shall never be stable as a society. It is no wonder that the practical educationist is bewildered by this confusing and disappointing state of affairs. It is not likely that he will succeed in doing so unless the truth about our ethical standards and the causes of their deterioration, if any, are reliably ascertained. But it is by no means easy to do so. The problem has wide and varied ramifications. Broadly, the problem of values falls into two categories

1. What is a proper as against an improper sense of values?

2. How to inculcate a sense of values ?

The first question belongs to the field of philosophy and the second, to psychology.

In order to know how a sense of discipline incorruptibility, etc., are to be inculcated in our youth, we must know how these values originate; what are the conditions under which a boy becomes honest or dishonest; and what are the actual tendencies in ethical thinking and acting that we can find in our youth to day.

Purpose of the study :

The present study is an attempt in this direction and tries to answer some specific questions falling in this field. It tries to find out :

(1) On what lines do the school children think about values?

(2) What relative importance do they attach to different values, such as truthfulness and incorruptibility ?

(3) What reasons do they give in judging this relative importance?

(4) Can they appreciate the circumstances, in which an individual is placed, while judging his conduct ?

Procedure of the present study :

The data were collected with the help of a questionnaire for ascertaining the opinions of the boys on various issues involving ethical judgment.

The issues were connected with the following :

(1) Disbelief in God.

(2) Bribery.

(3) Stealing.

(4) Lying.

(5) Not giving alms.

(6) Running away from a battle.

(7) Treason.

(8) Tearing pages from a library book.

(9) Drinking.

(10) Travelling without ticket.

(11) Abusing.

(12) Disobeying father.

The questionnaire was divided into two parts. In the first part, the above twelve values were formed into sixty-six possible pairs. The boys were asked which one of the two values in a pair they would be prepared to sacrifice in case there was a conflict between them, *e.g.* in the pair disbelief in God and treason, they were asked which one of these they would regard as the more culpable. Tney were also asked to indicate reasons for their choice. In the second part, actual situations involving the values were described. Under each value, one of the situations is ordinary in the sense that conformity to the value in that situtation is easy. The second situation presents trying circumstances such that they may be regarded as extenuating a lapse from the value. The purpose was to find out whether the comparisons of values in the abstract and in concrete situations tallied with each other. Also it was intended to find out whether the boys could see the difference between ordinary and extenuating circumstances. After describing each situation, two or three alternative ways of meeting the situation were mentioned. The ways can be broadly classified under implicit conformity, passive conformity, lapse, circumvention, utilitarian and irrelevant. They were also allowed to indicate their own way of meeting the situation in case they could not approve of any of the alternatives mentioned. This study was restricted to boys only from standards VI to X. Standard XI was omitted because the Principals are generally reluctant to allow testing of this class owing to distraction in the studies caused by the change in school routine.

Three schools were chosen : a denominational school, where religious instruction is given regularly ; an ordinary school, where no religious instruction is given ; and a public school.

The following table shows the composition of the sample :

TABLE I

Class	School A	School B	School C	Total
VI	20	15	20	55
VII	9	20	20	49
VIII	18	20	22	60
IX	20	25	24	69
X	21	24	22	67
TOTAL .	88	104	108	300

Owing to difficulties in getting the correct dates of birth, only grades are considered. The reliability of the questionnaire was estimated. The questionnaire was given twice within an interval of two months and it was ascertained how frequently the boys gave identical responses. The median percentage of identical responses was 90.9. Valildation by correlation with an external criterion did not seem to be applicable here.

Findings :

The returns to these questionnaires were examined. The following main conclusions emerged from the examination :—

(1) Disobeying father was, on the whole, regarded as the most condemnable. But this was not so in all schools. Girdharilal School conformed to this general ranking, but stealing and disbelief in God was regarded as the most condemnable in Delhi Public School and United Christian Schools respectively. But even in these schools, disobeying father was ragarded as the second most condemnable.

(2) The importance of belief in God diminished in higher classes. But filial obedience and courage in battle were regarded as more and more important with advance in class.

(3) The higher class regarded not giving alms as the least culpable.

(4) That a particular conduct was against rules was the reason least frequently given for regarding it as more culpable. This tendency was more pronounced in higher classes.

(5) The reasons given for the preferences between values were mainly utilitarian ; *i.e.* causing harm to others or to self was the main criterion on the basis of which a conduct was regarded as culpable. This tendency increased with class.

(6) The values did not belong to the same scale *i.e.* comparison of value A with value B was not based on the same considerations as the comparison of value A with value C.

(7) There was no agreement in the importance of values as shown in the first part of the questionnaire and their importance as shown by the frequency of implicit conformity to them in the second part.

(8) The boys did not seem to discriminate clearly between extenuating and ordinary circumstances.

The limitations of the questionnaire method and the problems intended to be answered thereby, necessarily circumscribed the utility of the results. But the problem can be tackled on a more ambitious scale in the following way :—

1. In the place of a questionnaire, objective tests of character can be used to diagnose the ethical level of our pupils and to ascertain whether there is any truth in the oft-repeated complaints of the deterioration of our moral standards.

2. The same type of study can be widened to find out the correlates of good behaviour : whether higher intelligence means better behaviour, whether higher economic status goes with better sense of values. Large scale surveys can also be carried out to ascrtain whether religious education over and above universal precepts of good behaviour is a healthy influence.

3. There is also much scope for an experimental method in this type of study. Methods that claim to inculcate high ethical standards can be put to experimental tests with control groups.

An Investigation into the Working of School Libraries in Delhi

By D. N. Abrol

Introduction :

The main motivation for this investigation was the contact with students who shunned sitting in the library and studying there. This is not a reflection on those who like to read library books in isolation, but it does indicate either some intrinsic defect in the working of school libraries which keeps the students away, or that there is something wrong with the students themselves. It is hardly right to blame the latter for the students are what they are because of the school and its concept of education. The fault lies in the system when students do not enrol themselves as members of the school library if it involves a nominal annual membership fee. This general lack of interest in the library is an unhappy feature of most schools in India today. And what makes the situation worse is the consciousness of the student that the library does not provide him with a reasonably fair service.

Analysis of the problem :

The main thesis begins with a discussion of the general problems of the "literate" and the "educated", their differentiated interests in reading and an analysis of the socio-economic factors causing the differentiation. It is maintained that in the present school conditions in India, there is a neglect of the intellectually inclined child because of an over-emphasis on co-curricular and cultural activities. An educational system is ultimately judged and sustained by its scholarship and the sense of scholarship must be created at the school stage. Good schools are few and the intellectual future of the country lies in what happens to the academically inclined child in the average school with its limitations both financial and human. The importance of the library is indicated in this context; and in view of the individual peculiarities of the schools, it is inferred that for improvement, each library must be considered individually in its own school situation. This highlights the necessity of the operational study approach adopted in this report.

Importance of the school library :

In the intellectual development of the student, the period of schooling is very important. The habit patterns formed during those crucial years, though not impossible to change, are so definitely set, that it would be better to watch the patterns during their development instead of depending upon the possibility of a later change. In this context, the school library plays a vital

role as an effective means of self-education. In particular, the school library has to function in two broad ways; firstly, in helping the student to acquire a wider knowledge of the subjects he is studying; and secondly, in creating a love for knowledge in general.

Difficulties in the development of libraries and reading :

But these desirable aims cannot be achieved unless the basic functioning of the school libraries is remedied. Generally speaking, the present trends in school library organisation do not take into consideration the developing interests of the young readers. The students do not have free access to the books; the loaning systems are complicated; the physical placement is not suited to the school levels; the general classifications meant for adult libraries are followed; and the librarians are resistant to change. All this cumulatively results in a student indifference towards the library.

Apart from these factors directly connected with the library there are others which affect academic development indirectly For example, there is the over-emphasis on co-curricular activities whose obvious attractiveness and spectacular value tend to militate against the primary interests of scholarship. It is in this connection that C. D. Deshmukh has remarked:

> "The primary duty of the teacher is to teach and the primary duty of the student is to study".

In addition, there are the disturbing influences of (i) the film and the radio; (ii) the disorganised participation in sports and games; (iii) the sophisticated social life of the rich; and (iv) the economically stifling condition of the poor.

In this complexity of disturbing conditions, the variety of school organisation enhances the difficulty of general school librarty re-organisation. Indeed, the library has to exist within the circumscribing atmosphere of the school. Public schools and convents have their own peculiar problems. Other difficulties face the indigenous denominational and non-denominational schools, and this also applies to government schools and schools managed by local bodies.

Again, there are schools housed in good commodious buildings, schools run in buildings hardly fit for the purpose and schools where the children have to brave the weather under a shaky canvas only. Further, there are schools which have playgrounds and the spaciousness of a real school atmosphere, and others which are appallingly cramped. In such a diversity no general policy for library development is possible. The schools are too individualistic in

character with their specific problems, their assets and their liabilities, both human and material. A functionally operational policy needs to consider the problems of each school separately and evolve means for the resolution. In human terms, the basic problem is the growth of library discipline in the student and removal of inertia in the staff. The first is a two-fold concept which involves a consciousness on the part of the student that a library is a place wherein he can find much for profit and pleasure, and a realisation that this achievement can only be obtained by maintaining in full the simple formalities for using the library. So far as the staff is concerned the problem resolves itself into an honest recognition of their own deficiencies and the creation of a desire to give their students a more sociologically emancipating education.

Scope and use of an operational study :

With the consciousness of the above difficulties, it was considered worthwhile to study the working of individual school libraries in detail to find out ways of solving their particular problems.

But what has been kept in view in this study is not the mere scientific structure of the library in a school, but its operational utility. It is maintained that the structure of the library is not so important as its functional utility to the readers. If the students can joyfully approach the books freely, can brouse over them and can get them issued with the least possible difficulty, then only is the library worth its existence. Indeed, the structural organisation of the library is a means to an end—the pleasurable use of its books by the readers.

It is hoped that the detailed study of two school libraries considered in this report would provide some concrete recommendations for their improvement; but all through, the attempt has been made to suggest changes or modifications which would not involve any major additional expenditure. It is shown that within the present finances, it is possible for the librarians and the school staff to make the libraries much more useful functionally by an intelligent re-adjustment of the library systems.

Procedure :

Initially, the two selected libraries were visited regularly for two weeks. The visits were arranged to observe the libraries functioning at different hours of their total working periods. This enabled the observation of the type of activities carried on in the library and also the study of the arrangement of the books and other articles in the libraries.

The two selected libraries represent broad categories. One of the schools was established before and the other after independence. The former was started by an indigenous religious body in 1933 and is a double shift school. It draws students from almost all the socio-economic strata of Delhi except the richest. It has 13,069 books in its library (excluding 920 Urdu books). A study of the trends regarding the purchase of books, after independence was also attempted. Furthermore, an attempt was made to gauge the effect of the changing emphasis on different languages on the purchase policy of the library.

The second school was started in 1952 and is managed by a local body. Because of its recent origin, the school has not faced the difficulties of a conservative management. It is a single shift school. The enthusiastic librarian there has experimented with the open shelf system and, surprisingly enough, has had to work single-handed. The library has about 5,011 volumes.

Comprehension and subject categorisation of books:

In these two libraries the detailed study of the books was made. The books were first divided on the basis of comprehension. Here the main sections are three :

(1) Students;

(2) Teachers; and

(3) General.

The first section includes books for children, and at some points these books are entered separately as a sub-section. It also includes text-books. In each of these sections, the division is further made on the basis of the language of the book, Hindi or English. The third point of division is between books in the issue and reference sections. This complete one line of division.

The second criterion for categorisation is the subject. The following subject groups are used:

(1) English

(2) Hindi and Sanskrit

(3) Mathematics

(4) Science (Physics, Chemistry and Biology)

(5) Social Studies (Economics, Civics and Commerce)

(6) General Science (including Geography and Health)

(7) History

(8) Hobbies and Fine Arts (including Drawing, Games and Sports)

(9) Philosophical Subjects (including Religion, Philosophy, Psychology, Education, Library Science and General Knowledge).

Such a grouping is used as books in school libraries can be generally put under these categories thereby facilitating access to the readers. As the main purpose of this study is to consider the functional utility of the libraries and not their structural fineness, the formal rules of classification have not been followed.

The categories for English are :

(1) Poetry
(2) Drama (including History of literature and Criticism)
(3) Fiction
(4) Stories (including travel, adventure, animal etc.)
(5) Essays
(6) Biographies (including autobiographies)
(7) Text-books, grammar, composition, letter-writing, precis-writing, teaching methods and dictionaries.

Hindi books have a more detailed grouping in the following twelve categories :

(1) Nursery rhymes and fairy tales
(2) Fables and folk tales from various countries
(3) Children's classics and animal stories
(4) Children's poetry and drama
(5) Adventure stories, travel and shorter novels
(6) Stories from the mythology, the epics and history
(7) Biographies (including autobiographies)
(8) Short stories and novels
(9) Poetry and drama
(10) Essays (criticism, history of literature)
(11) Text-books, grammar, composition, teaching methods and dictionaries
(12) Functional literature

Newspapers and periodicals are considered separately.

Present position of the book stock in the two libraries:

The present position of the books is shown in Tables I and II referring to the first and second school libraries respectively.

Table I

Showing present position of the books : (1) for students, teachers and general, (2) On the basis of issue and reference, (3) Language-wise, and (4) Subjectwise

Subject Categories	Students				Teachers				General				Total		Grand Total
	Issue		Reference		Issue		Reference		Issue		Reference				
	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	
1. English	1,345	..	10	..	558	..	1	..	959	1	27	..	2,900	1	2,901
2. Hindi	4	2,918	..	..	7	10	..	..	1	2,615	..	11	12	5,554	5,566
3. Mathematics	122	35	..	..	11	1	..	..	6	..	..	..	139	36	175
4. Science	114	13	..	..	60	..	..	..	30	1	..	..	204	14	218
5. Gen. Science	197	167	..	..	53	30	..	..	276	212	5	..	531	409	940
6. Soc. Studies	41	124	..	..	213	28	1	1	130	129	1	1	386	283	669
7. History	4	26	..	..	173	55	..	..	40	71	5	..	222	152	374
8. Hobbies and Fine Arts	6	7	..	..	3	9	..	..	91	90	..	..	100	106	206
9. Philosophical Subjects	..	334	..	..	439	315	4	2	77	849	..	..	520	1,500	2,020
Total	1,833	3,624	10	..	1,517	448	6	3	1,610	3,968	38	12	5,014	8,055	13,069

Table II

Showing present position of the books: (1) For students, Teachers and General, (2) On the basis of issue and reference sections, (3) In two language Groups, and (4) In subject matter Groups

Subject Categories	Students				Teachers				General				Total		Grand Total
	Issue		Reference		Issue		Reference		Issue		Reference				
	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	Eng.	Hindi	
1. English	222	..	..	..	279	..	2	..	471	..	26	..	1,000	..	1,000
2. Hindi	..	780	..	6	..	6	..	..	..	1,523	..	3	..	2,312	2,312
3. Mathematics	50	41	..	..	12	..	..	..	15	..	..	..	77	41	118
4. Science	120	6	..	..	31	..	..	..	85	..	..	..	236	6	242
5. Gen. Science	..	8	..	..	41	8	1	..	147	110	1	..	190	126	316
6. Soc. Studies	20	63	..	..	67	23	1	..	59	124	1	..	148	210	358
7. History	..	4	..	..	83	12	4	..	48	76	5	..	140	92	232
8. Hobbies and Fine Arts	14	10	..	..	..	3	..	..	89	25	..	..	103	38	141
9. Philosophical Subjects	..	..	..	..	142	38	3	..	42	67	..	..	187	105	292
Total	426	912	..	..	655	90	11	..	956	1,925	33	3	2,081	2,930	5,011

There is a general paucity of reference books. Mathematics, Science and Hobbies and Fine Arts categories also need more books. The category of Philosophical Subjects is unusually large. Books belonging to Teachers' category also occupy a disproportionate share (Table I).

In the case of the second library, the book distribution is slightly better, though teachers' books in English are relatively more in number. Reference books are lacking in this library too (Table II).

An analysis of the yearly additions to the libraries shows that there has been no plan for book acquisition and student interests have been more or less overlooked. In particular, there is no evidence that the school authorities have at all been alive to the problem of how the scope of the library could lead to the sociological emancipation of the children. This crucial issue could only be resolved if the teaching staff as a whole realised more specifically the needs of an evolving democratic society.

Re-organisation plans :

Both the school libraries need the re-grouping of books in the different categories suggested above.

In addition, the first school library requires a complete new accession register and a full card catalogue. Large existing stocks of books need to be processed and put into circulation. This implies a special re-organisation of the library equipment. A workable plan for this purpose is suggested in the main report. Finally, a simplified loaning system is suggested to facilitate the functioning of the library. It is particularly recommended that borrower's tickets should be introduced into the library as early as possible. The financial outlay involved in the suggested re-organisation could be appreciably reduced by acquiring the services of some outgoing higher secondary students for the summar vacation on a nominal honorarium.

The second school library is smaller in size and is reasonably well organised. But it needs a card catalogue and, considering that it works on the open shelf system, it is suggested that book plates be introduced to facilitate the task of book replacement. The book plates could be made of ordinary card-board and the students could certainly supply all the necessary labour for their making. It is felt that this school library could reasonably well re-introduce supervised library period.

In conclusion, it is hoped that if the suggested recommendations are reasonably well carried out, this would materially improve their functioning. The general analysis of the school library problems presented in the report should also activate the interest of other school authorities and educationists.

Preparation of Material for the Study of Local Geography in the Senior Basic Class of C.I.E. Experimental Basic School

By G. R. Sudame

Importance of the Problem :

In the basic system of education all knowledge to be imparted has to be through the media of craft, physical enovironment and social environment. But during the last twenty years of the growth and development of basic education, an undue stress has been laid on the use of craft as the medium of instruction. The other two media, namely the physical and social environments of the child have all along been neglected.

In order to use physical and social environments of a locality as effective media of instruction, it is necessary to make a study of the surroundings of the locality on scientific lines. Everything in the environment of a locality cannot be used to correlate knowledge. A proper survey has therefore, to be made at the beginning. Only then can relevant and significant features be listed and used in teaching.

Geographical data form a very important part of a course of social studies. It is not desirable to compartmentalise social studies in the narrow and isolated subjects like geography, history and economics. But at the same time it is necessary to decide what should be included in these subjects to create the unified and meaningful subject area *i.e.*, social studies. This analytical study of the various subjects included in social studies will help us in deciding upon the contents of the whole. Needless to mention that no such distinctions need, and should, however be made when the subject area is being taught to the students.

Geography is defined to be the study of the interaction of man and his environment. Local geography is the study of the interaction of man and his environment at the local plane. Local geography is not something different from geography as a whole. In fact it is not a separate subject, but only a technique of studying geography. Local geography forms an important part of a curriculum at different stages of education, in most of the progressive countries, today. This is because of the realization that true learning must be based upon the experience of the child and direct observation of concrete facts and phenomena around him. In various countries, local geography is taught as a part of social studies, or a part of geography or in a few countries as an independant subject termed as "Local Study".

In view of these considerations, a study of local geography must be included in the curriculum of a Basic School, preferably as a part of the social studies course.

The present study was an attempt to make a survey of the environment of the C.I.E. Experimental Basic School and utilize the data collected through this survey in framing a syllabus in local geography for senior basic classes.

The Project :

The primary aim of this project was the preparation of material for the study of local geography. The following were the various steps adopted in carrying out the project :—

1. Collection of data regarding the social environment of the students of classes VI, VII, and VIII of the Basic Schools and their parents.
2. Collection of data regarding the physical environment of the Basic Schools.
3. Organisation of data about physical and social environment into units of study.
4. Developing a tentative syllabus in local geography from the organised data on the basis of psychological needs and capacities of the students of classes VI, VII and VIII (age group between 12+ and 14+).

The data regarding social environment of the students reading in classes VI, VII and VIII were collected. This was done from two sources. The first was from the results of the survey done by Smt. Kamla Katyal in 1954-55 in the Basic School. She had given a questionnaire to the students, through which information regarding the localities in which they lived; the income, educational standard, and occupations of their guardians, their hobbies, their housing condition etc. was asked. This year the Ideal Community Centre, which is located in the Basic school had given to the students a similar questionnaire. So, it was not found necessary to issue a fresh questionnaire to collect data about the social environment of the students. Data collected through the survey sheets issued by the Centre was tabulated and analysed for the purpose of the present study.

It was found, from both the sources, that students come from the nearby localities, their parents belong to low income groups, their housing conditions are very poor and generally their parents are not very educated. But it was also found out that the parents are interested in the education of their children and their own self-improvement through the activities of the centre.

Physical environment of the students was delimited to an area within a walking distance of about two miles—from the Basic School. This included area up to Kashmeri Gate, Model Town, Subzimandi and the river Jamuna. Other places in Delhi, outside this area, which are within the experience of the students and where they can be taken out for excursions, were also included in the physical environment. Detailed data regarding physical environment were collected through field study, from Imperial Gazetteer and certain other sources. These data were organized under the following heads :—

(1) Physical setting.

(2) Climate & weather.

(3) Industries.

(4) Occupations.

(5) Trade & commerce.

(6) Transport and Communications.

(7) Cultural patterns.

On the basis of the data regarding environment (both physical & social) and the psychological needs and capacities of the children within the age group of 11+ and 14+, who are studying in the Senior Basic Classes) a tentative syllabus in local geography was framed for the three classes.

Units of study under the following heads were framed :—

(1) Physical setting.

(2) Climate & weather.

(3) Industries.

(4) Occupations, trade and commerce.

(5) Transport & communications.

(6) Cultural patterns.

(7) Map Work.

Evaluation :

In order to test the practicability of the tentative syllabus evolved, part of it was tried in actual class-room teaching in the three classes for about nine weeks. The same unit was taken up simulataneously in all the three classes, so that differences in the grasping power of students could be brought out and then the syllabus could be divided into three parts according to the needs of the students in each class.

The study units included were as follows :—

(1) Work of the river Jamuna, its uses.

(2) Climate & weather.

(3) Industries large & small scale.

(4) Transport and communications.

(5) Map Work of an elementary nature.

It was found that there are no significant differences in the grasping ability of the children in the three classes ; though a tendency in the VIIIth class to be able to analyse, classify and generalize was noticed. In the VIth class the students could not understand these complex processes. They were more interested in observation of concrete facts. The VIIth class students were in between the two in their ability to analyse, classify and generalize.

On the basis of the experience of actual teaching, the syllabus was divided into three parts. For the VIth class processes involving simple observation were included, for VIIth and VIIIth classes more complex processes involving analysis and generalization were included. The grading from VIth to VIIIth classes was from simple to difficult. The syllabi for the three classes were framed on the same lines as the general syllabus for all the classes.

During the project it was experienced that geography teaching as a part of social studies is done in a very defective manner, and does not lead to scientific thinking. It is hoped that the present syllabus, based as it is on the immediate environment of the children and their psychological needs and interests, will be of some help in training the children in accurate observation, analysis and generalization of geographical facts and phenomena.

A Study of Abilities of Children of Groups A, B and C of Higher Secondary Examination Course of Delhi

By H. Singh

To utilise the abilities of the children in the most fruitful manner, it is necessary to study these thoroughly. With the wide variety of courses offered in the Higher Secondary Schools it becomes even more important to know the nature of abilities so that these should be properly assessed and appraised so that the future of the students may be planned in the right direction. In India, when the diversified courses of study are going to take an important place in the Higher Secondary education, the future of the children cannot be decided haphazardly by putting them in any group whether suitable to their abilities or not.

The problem under investigation is the study of abilities of children of groups A (General Arts and Social Sciences), B(Natural Sciences)/and C (Commerce) of Higher Secondary Examination Courses, Delhi.

The purpose of this investigation is to study the nature of different abilities and their relation to the success in the different groups of courses. Due to non-availability of standardised tests for assessing the mental ability of the students, standardised Verbal Group Test of Intelligence (B.P.T.) 7 for 13+ and BPTB. for 14+and above) has been used. The different aspects of the above purpose can be summarised as below :

1. Is there any relation between the composite scores of eighth class final examination and the success in higher secondary course ?
2. Is there any relation between the scores of different subjects of eighth class and their relevant equivalents in the ninth class ?
3. What part can general intelligence play in determining the success in the higher secondary courses?
4. What is the role of special abilities in determining the success of students in the different groups of courses?

Keeping these purposes in view, the following hypotheses have been formulated :

1. There is a significant difference in the Intelligence level of the students of General Arts and Social Sciences Group (A), Natural Science Group (B) and Commerce Group (C).

2. There is a significant difference in the level of language ability (in English as well as Modern Indian Language) of the students of the three groups.

3. The composite scores of the eighth class final examination are correlated significantly and positively with the composite scores of the First Terminal Examination in the ninth class.

4. There is a significant and positive correlation between composite scores of eigth class and ninth class with Intelligence Test scores.

5. There is a significant and positive correlation between the different subjects of eighth class and the corresponding relevant equivalents in the ninth class.

To test the above mentioned hypotheses, a sample of 388 students from four Higher Secondary Schools of Delhi has been taken and the distribution of students in these four schools, is given in the following table.

TABLE I

Showing number of students in different groups of study from different schools

Sl. No.	Name of the School	Groups of Study			Total
		'A'	'B'	'C'	
1	L. N. Girdhari Lal Higher Secondary School, Fatehpuri, Delhi .	18	35	30	83
2	Anglo Arabic Higher Secondary School, Ajmeri Gate, Delhi .	3	16	36	55
3	D. A. V. Higher Secondary School, Darya Ganj, Delhi . . .	19	46	32	97
4	S. G. T. B. Khalsa Higher Secondary School, Karol Bagh, New Delhi	52	61	40	153
	TOTAL .	92	158	138	388

The scores of the students on the Verbal Group Intelligence test, constructed and standardised by Bureau of Psychology, U. P., Allahabad have been recorded along with their scores in the eighth class Final Examination, scores in the different subjects in the eighth and ninth classes and composite scores in the ninth class First Terminal Examination.

The differences between the mean scores of the three groups on Intelligence test have been tested for significance. Further, the differences in mean scores of the students of groups A, B and C in English (VIII class), Hindi (VIII class) and English (IX class) have also been tested for significance.

The correlation coefficients between :

1. Composite scores of the students in the eighth class and composite scores in the ninth class.
2. Composite scores of the students in the eighth class and Intelligence test scores.
3. Composite scores of the ninth class and Intelligence test scores.
4. Scores of the students in the different subjects of the eighth class and their relevant equivalents in the ninth class *e.g.*

English—English, General Science—Chemistry etc. were calculated and tested for significance and predictive efficiency

The different results obtained can be summarised below :

1. The frequency polygons drawn from the scores on Intelligence test for groups A, B and C as well as the whole group are positively skewed. The skewness of the frequency polygon for the whole group is 5·6 which is significent at ·05 level with critical ratio of 4·48 where as 1·96 is the value required.
2. The results of test of significance of the difference between the mean scores on Intelligence test, English (VIII class), Hindi (VIII class) and Hindi (IX class) are given in the following table :—

TABLE II

Showing the results of the test of significance for difference between mean scores of different subjects of different groups of study

Scores	Groups of Study	Critical Ratio
1	2	3
Intelligence Test Scores . . .	'A' and 'B'	6.62*
	'A' and 'C'	0.30
	'B' and 'C'	6.46*

TABLE II—*contd.*

1	2	3
Scores in English in VIII class	'A' and 'B'	9.13*
	'A' and 'C'	2.47*
	'B' and 'C'	6.59*
Scores in Hindi in VIII Class	'A' and 'B'	10.59*
	'A' and 'C'	2.08*
	'B' and 'C'	4.85*
Scores in English in IX Class	'A' and 'B'	10.55*
	'A' and 'C'	0.15*
	'B' and 'C'	11.14*

*Value is significant.

The value of 1·96 is significant at ·05 level.

3. The following table shows the values of product-moment co-efficients of correlation (r) and their forecasting efficiency (E).

TABLE III

Showing the values of r and E

Sl. No.	Scores	Groups of Study					
		'A' N=92		'B' N=158		'C' N=138	
		r	E	r	E	r	E
1	2	3		4	5	6	7
1	Intelligence test scores and eighth class composite score	.291	..	.540*	16%	.239*	3%
2	Intelligence test scores and ninth class composite scores	.177	..	.444*	10%	.357*	7%
3	Eighth class composite scores and ninth class composite scores	.446*	11%	.670*	26%	.598*	20%
4	English eighth class and English ninth class	.371*	7%	.466*	12%	.427*	10%
5	Hindi eighth class and Modern Indian language ninth class	.471*	12%	..	..	.291*	4%

TABLE III—*contd.*

1	2	3	4	5	6	7	8
6	General Science eighth class and Chemistry ninth class . .	..	..	.464*	11%	..	..
7	General Science ninth class and Physics ninth class . .	..	..	.287*	4%	..	..
8	Mathematics eighth class and Mathematics ninth class .	..	..	.552*	16%	..	..
9	Mathematics eighth class and Commerce ninth class . .	..	..	..	..	.261*	3%
10	Social Studies eighth class and Economics ninth class . .	..	..	..	..	.221*	2%

*Value is significant.

The value of ·254 is significant at ·05 level for 'A' group.

The value of ·195 is significant at ·05 level for 'B' group.

The value of ·209 is significant at ·05 level for 'C' group.

Summary of Findings :

1. It has been found that the differences in the mental ability are significant for the three groups. Natural Sciences group (Mean = 42·42, SD=17·86) seems to be superior to general Arts and Social Sciences group (Mean = 28·66, S.D.=14·61) and Commerce group (Mean = 29·30, S. D.=17·00), the critical ratios being 6·62 and 6·46 respectively, whereas the value of 1·96 is significant at ·05 level. No significant difference has been found in the mental ability levels of General Arts and Social Sciences group and Commerce group, the critical ratio being 0·30, whereas the value of 1·96 is significant at ·05 level.

2. Significant differences have been found in the language ability of the three groups when the eighth class scores in English and Hindi are taken as indices of this ability. But there seems to be no significant difference between General Arts and Social Sciences group and Commerce group (CR=0·15), when the scores in English in ninth class are considered.

3. There is positive and significant relationship between Intelligence scores and ninth class composite scores, Natural Sciences group and Commerce group, the values of r being ·444 and ·367 respectively.

4. The relationship between the eighth class composite scores and the ninth class composite scores is positive and significant for the General Arts and Social Sciences group, Natural Sciences group and Commerce group, the values of r being ·371 ·466 and ·427 respectively. These results show that the achievement in the ninth class (Y) could be predicted from eighth class composite scores (X) and Intelligence test scores (Z). The multiple regression equations are given below for General Arts and Social Sciences Group (N=92)

$y = \cdot 6z + \cdot 48x$ (deviation form)

or $Y - 209 \cdot 79 = \cdot 60(Z - 28 \cdot 66) + \cdot 48(X - 437 \cdot 91)$ (score form)

For Natural Sciences Group (N=198)

$y = \cdot 69z + \cdot 77x$ (deviation form)

or $Y - 246 \cdot 47 = \cdot 69(Z - 42 \cdot 42) + \cdot 77(X - 527 \cdot 23)$ (score form)

For Commerce Group (N=138)

$y = 1 \cdot 17x + \cdot 63x$ (deviation form)

or $Y - 209 \cdot 93 = 1 \cdot 17(Z - 29 \cdot 30) + \cdot 63(X - 432 \cdot 53)$ (score form)

5. There is a significant relationship between the scores of the students in English in eighth class and scores in English in ninth class for all the three different groups.

6. A significant relationship exists in case of the scores of the students in Hindi in eighth class and scores in Modern Indian Language in ninth class for the General Arts and Social Studies group and the Commerce group.

7. In the Natural Science group the scores of the students in General Science in eighth class are significantly related to the Scores in Chemistry and Physics in ninth class

8 The Scores of the students in Mathematics in eighth class also bear a relationship with the scores of Mathematics in ninth class (in Natural Science group)

9 A significant relationship exists between the scores of the students in Mathematics in eighth class and in Commerce in ninth class for the Commerce group.

10 The scores of the students in Social Studies in eighth class are significantly related to the scores of Economics in ninth class in Commerce group.

Recommendations :

In view of the present findings the following recommendations may, however, be made :—

1. While allocating the students to the three different groups of Higher Secondary courses, general Arts and Social Studies group, Natural Sciences group and Commerce group, their

general intelligenee level may be given due importance, as the success in different groups having some compulsory subjects, depends on a level of mental ability. As no standardised tests for appraising the general intelligence are available it is necessary to construct and standardise such tests as early as possible.

2. The various optional subjects need different degrees of different specific abilities while allocating the students to the different groups their specific abilities should be assessed properly with the standardised measures of abilities. As it is found that the students of Natural Sciences group are superior to the students of General Arts and Commerce groups in language ability, it is desirable to consider the marks of students in Hindi and English in their allocation to the different groups. It will be good if the language ability is assessed by standardised tests but in the absence of these, some faith can be had in the eighth class final examination marks in these subjects.

3. Composite scores of the students in the eighth class have a relationship with ninth class composite scores. It is therefore, desired that eighth class composite scores may be given due importance in the process of allocation of students. The scores of the subjects in the eighth class may be considered as the indices of achievement in their relevant equivalents in the ninth class.

4. School examination marks have been found useful in predicting the success of the students in the ninth class. So their proper and regular recording is necessary. Cumulative record is the corner stone upon which programme of guiding the students can properly be built.

5. To help the individuals to plan their own future wisely in the light of all the factors that can be mastered about themselves and about the world in which they are to live and work, the organisation of guidance services can be the basis for the successful functioning of the school system which seeks to provide a rich variety of educational fair to cater to the different needs, interest, abilities and capabilities. The role of such services, specially in studying the individuals, is greater at the delta class (eighth class) level after which the diversification is to occur. This will save the students from the old haphazard way of pick and choose, without any reference to their learning equipment and goals.

The different purposes which can be served by the guidance services may be listed as below :

(a) Finding school norms for standardised measures of intelligence and other abilities, achievement test, aptitude tests etc. The results of these tests, coupled with school examination results can make the allocation more scientific and advantageous.

(b) Testing students' abilities and matching these with the different subjects of the different groups.

(c) Collecting data including family history, cultural background etc.

(d) Providing facilities for individual guidance in educational, vocational and personal-social fields.

(e) Discriminating educational and vocational information. The number of vocations has greatly multiplied and the success and happiness of the individuals depend upon the right choice of these. Again, these are determined by the choice of suitable subjects of study in the schools and colleges.

An Investigation into the Causes of Indiscipline among the Boys of Classes VIII to X Belonging to Delhi Schools.

By J. S. Bagga

Purpose of the Study :

The behaviour of a person is determined by the needs and his environment. In life any individual has to make adjustments with his physical, social and cultural environments. If in the process of adjustment his needs are not satisfied the result may be anti-social behaviour. It is not necessary that every frustration should lead to maladjustment. Whether an individual is able to bear the conflict or not, will depend upon the individual's personality. Thus, an indisciplined or antisocial act may be viewed as an unsuccessful attempt on the part of the individual to adjust with his environment.

It is necessary, therefore, to find out, how far the psychological needs of an individual and his adjustment difficulties are responsible for indisciplined behaviour. Such a study will be valuable to teachers because it will reveal to them the underlying causes of misbehaviour of their students. A proper understanding of factors influencing child's behaviour is necessary to find out suitable remedies. It will also be useful to parents, as it will point out the adjustment difficulties faced by the children. Home environment and attitude of parents determine the type of adjustment that the individual would make in school and in life in general. Individuals' temperamental habits and psychological make up are greatly influenced by home conditions.

The present study was undertaken to know how far the psychological needs and adjustment difficulties of children are responsible for their misbehaviour. Specific purposes of the study are to determine—

1. How far psychological needs of security, adventure, companionship, independence and love etc. are responsible for indiscipline.
2. How far individual's adjustment difficulties with self, school activities and teachers are responsible for indiscipline.
3. How far the parent's attitude and home environment contribute to child's difficulties and misbehaviour.

Scope of the Study :

The present study was confined to three boys' schools of Delhi. The study was limited to VIIIth, IXth and Xth classes students, because schools were reluctant to make XIth class available for investigation. A sample of 336 students was chosen—

112 from each of the three schools. Equal number of students were chosen from each of the three classes on random basis. Students were selected on the basis of grades, because school records did not give reliable ages.

The Present Procedure :

Since the present study aimed to investigate the underlying causes of indisciplined behaviour, it was necessary to find out the problems, difficulties and needs which trouble the adolescents. Two questionnaires were prepared ; one, for the teachers ; and second, for the students. The questionnaire for the teachers was prepared to serve two main purposes. Firstly, to know the problems and difficulties which hinder them to discharge their duties efficiently. Secondly, to know their views about the causes of indiscipline in students. The investigator interviewed a number of teachers in this connection and constructed the questionnaire on the basis of these interviews. Items were designed to elicit their views about the causes of indiscipline, their attitude towards teaching profession, reaction to the people's attitude towards them, economic difficulties, service conditions, views about educational courses and examination system.

In the light of the recent literature on indiscipline in schools and colleges and related subjects, a tentative list of the causes of indiscipline was prepared. About 123 items were prepared to elicit their attitudes towards various areas of adjustment and difficulties confronting them. The investigator consulted Minnesota Personality Schedule and S. R. Youth Inventory in constructing the items. The items were translated into Hindi so that they could be understood easily by the students. Great care was taken to keep the language as simple as possible. Provision was made to check the items in the affirmative or in the negative. Cross questions were provided to check the genuineness of responses. Items concerning different areas were mixed up to avoid conditioning of children to stereotyped answers and getting more reliable ones. The questionnaire was given to ten students for a try-out. Directions and items discovered defective were modified according to their reactions.

The Findings :

1. Unsatisfactory family relationships were found to be associated with indisciplined behaviour of the child. Too much strictness, criticism or even leniency by parents may develop in him undesirable behaviour patterns. Partiality and unsympathetic attitude of parents causes conflicts in the boy's mind which makes his adjustment difficult.

Parents of 26 per cent adolescents were strict ; about 30 per cent did not get love from their parents ; 52 per cent were criticised by their parents and about 30 per cent felt annoyed when criticised.

2. Poverty was also a great factor responsible for indiscipline. Insufficient pocket money, unsatisfactory food and clothes made the child feel inferior and indisciplined. About 32 per cent boys were dissatisfied with the food and clothes they got and about 42 per cent did not get sufficient pocket money.

3. Environment of the home was found to condition the child's behaviour. Quarrels and bickerings at home, overcrowdedness, noise and unsatisfactory general atmosphere, made the boys feel insecure, which often resulted in undesirable behaviours. About 38 per cent had no peaceful place at home, and 27 per cent did not like their home environment.

4. Environment of the school was found to have a great impact in the adolescent's behaviour patterns. Small, unhealthy crowded and noisy school building tended to make the children dislike the school and its programme. About 32 per cent students felt that their school was a noisy place; and 30 per cent did not like school activities.

5. Absence of extra-activities in the school was found to be a factor associated with indiscipline. About 64 per cent of students said that there were not enough opportunities for recreation in schools, 38 per cent of them wanted more time for recreations.

6. Strict rules and regulations tended to make the children rebel against them and feel pleasure in breaking them. About 34 per cent of the boys considered school rules strict and 36 per cent of them felt that they did not get justice in school.

7. Undesirable attitude of the teachers was found to be associated with indiscipline. Incapability of teaching, partiality, unsympathetic attitude, criticism and punishment were found to be disliked most by the students. About 20 per cent of students considered their teachers incapable. 19 per cent of them felt that the teachers were partial. About 29 per cent of the students, said that their teachers did not take interest in them, and 25 per cent of them felt that they gave unjust punishment.

8. Low intelligence was also found to be related to indiscipline. Low intelligence made difficult for the boy to keep pace with the class. This resulted in inferiority feeling and caused frustration. About 18 per cent of the students considered themselves to be incapable of studying; 34 per cent of them found their courses beyond their comprehension.

9. Lack of interest in studies had also a bearing on the behaviour of the children. About 38 per cent of the students had no interest in their subjects.

10. Some physical handicap or ill-health was also found to be related to indiscipline. About 25 per cent of the students felt tired soon : 12 per cent of them suffered from indigestion ; and about 13 per cent of them felt pain in the eyes while studying.

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11. Satisfaction or dissatisfaction of the needs, for independence for recreation, for companionship were found to have a bearing on the behaviour of the adolescent. About 32 per cent of the adolescents had nobody to whom they might talk about their difficulties, and parents of about 25 per cent of the students restricted their activities.

12. Anxiety and worries of studies and of future were found to be associated with indiscipline. Personality characteristics associated with indiscipline were discovered to be emotional instability, guilt feeling, aggressiveness, inferiority feeling, pessimism and sadness. About 64%adolescents felt guilty, 36 per cent had doubts in religion; about 52 per cent felt that there was a great injustice in society, and had hatred against economic inequality.

Teachers' Problems :

1. About 24 per cent of teachers in these schools were found to have no interest in teaching; 31 per cent of them felt that they could do better in some other occupation. As many as 38 per cent still wanted to leave the profession.

2. About 79 per cent of the teachers were found to have difficulty in living comfortably, with their income; about 54 per cent were worried about financial hardships. About 16 per cent preferred even to die than to become a teacher.

3. About 80 per cent ofthe teachers felt they were not respected by society and due to this factor along with economic hardships, they were unable to work efficiently.

4. About 60 per cent of the teachers were found to have difficulty in paying attention to every child due to overcrowdedness and heavy courses. About 92 per cent of them considered education system defective ; and about 62 per cent of them could not have their own initiative.

5. About 38 per cent of the teachers were found to be worried about security of service. About 71 per cent considered the school administration defective; 53 per cent were worried about future, and about 84 per cent did not find the conditions in school appropriate for work.

All these factors were considered to undermine their efficiency.

Suggestions :

1. Schools should have a 'Discipline Committee' which should be entrusted with the task of investigating the cause of every indisciplined behaviour.

2. Students should be encouraged to frame rules for themselves.

3. Schools should have a students' jury and disciplinary cases should be dealt by it.

4. Students should be encouraged to participate in democratic activities and should be given responsibilities.

5. Tutorial system should be introduced to establish closer contact between the teacher and the pupil.

6. Administrators, teachers and students should know their respective responsibilities clearly.

7. Parent-teacher associations should be established to acquaint the parents about the factors which may cause maladjustment in children.

8. School should be a happy place and extra-curricular activities should be encouraged.

9. Administrators should have closer relationship with teachers and should try to help them to solve their difficulties.

10. Teachers should take interest in their work and try to remove apprehensions in the children's minds about their partiality. They should be sympathetic and should approach the students with love and affection.

11. Academic programme of schools should be reorganised to meet the needs and interests of adolescents.

A Study of the Attitudes of the Members of the Parliament toward Basic Education

By Kamal Nandini Verma

Purpose :

The main purpose of the study is to see how the members of the Parliament feel about Basic education, *i.e.*, whether they are favourable and sympathetic or they are opposed to it and have an attitude of antipathy. Firstly, it is to be seen whether the Parliament as a body is favourable or not and secondly, the attitudes of the members belonging to the different parties are to be judged. The effect of a study on a party basis is made in order to gauge the possible change in Government at the centre.

Origin of the problem :

Originally it was planned that attitudes of the different professional groups toward Basic education be studied; the groups being businessmen, government officials, scientists, educators, politicians etc. All these groups with their differing backgrounds would have given a cross-section of the intelligentsia. In India, quite paradoxically, educational policies have been determined more by the politicians than by members of any other profession. If the politicians are to be considered then the members of the Parliament seem to be the best group, being the representatives of the people and also having the authority to direct the course of education of the country.

But why "Attitude toward Basic Education Study" ? Since its very inception, Basic education has been a point of controversy. The protagonists of Basic education have just not cared for a good many points like its cost, its applicability to urban areas, the admission of students coming up from these schools to traditional schools at higher stages or to the colleges, the academic standards attained by the students and so on. On the other hand the opponents have also criticised it ruthlessly even to the extent of it being a form of child labour. One interesting point about it is that even the protagonists send their children to public schools feeling themselves and giving others the impression of its inferiority to the other system.

Such a situation affects the progress of the system and a long range planning cannot be done unless the educator can, to some extent, be assured of the position of this system.

Role of the parliament :

Parliament is the most competent body which, with the authority it wields over the policy matters, can, to some extent, assure stability in the minds of the public in general and educators

in particular. The role of the Parliament becomes more significant because of the directive principles of the state policy under which the provision for free, compulsory and universal education up to the age fourteen is made.

Attitude and opinion :

Herein the definition of attitude given by Thurstone, "Attitude is a generalized reaction for or against a specific psychological aspect", is followed. He is thus primarily concerned with what we may call reaction to stereotype. This term needs further elucidation along with the clarification of the term opinion. Attitude, as a concept, is used here as expressing the totality of a man's inclinations and feelings, prejudice or bias and convictions about anything is decidedly a subjective and, personal affair.

'Opinion' as used here means a verbal expression of attitude "An opinion symbolizes an attitude". This is how Thurstone defines opinion.

Opinion as an index of attitude :

Opinion as an indicator of a person's attitude has an objection to its usability in that manner. The person concerned may not be giving the truth about his real attitude, either knowingly or otherwise. Considered this way, his actions may also be distortions of his real attitude as the same mask of personality may be working in the latter position too. If that be the case, as it generally is, the opinion is the best thing required for study because it indicates to some extent the course of action a person may follow.

Construction of a questionnaire :

A number of persons were requested to express their opinion, about Basic Education. Their statements contained facts and opinions about Basic Education. On the basis of these statements a preliminary list of 103 items was prepared which was submitted to judges for rating on a nine point scale.

The judges were requested to keep the following points in view :

(1) That they were to rate the statements so as to express their opinion regarding the item being an indicator of favourable attitude or unfavourable attitude, or an attitude somewhere in between the two extremes.

(2) That the scale, from 1 to 9, represented a continum from strongly unfavourable to strongly favourable through neutral.

(3) That while rating, the personal opinion of the judge should not enter into consideration. The judges were to rate only the efficiency of the item.

A final sample of the ratings of 50 judges was taken to construct the scale. The three criteria, used for the final selection of items, were as follows :—

(1) The scale value.

(2) The ambiguity value.

(3) The logical necessity and importance.

The final scale had to be reudced to seven points because of the paucity of items with their scale values in the two extreme intervals. Five items were retained for each of the seven intervals.

Administration of the Scale :

Along with the endorsing of the 35 items, information regarding the state, the party and the profession to which a particular subject belonged was sought for. Again, the subjects were requested to express their general opinion regarding Basic Education.

The subjects were approached directly by the investigator ; through messengers, for the distribution and collection of the questionnaire ; and also to some the questionnaire was mailed. In all 159 replies were received.

Analysis and interpretation of the data :

The data were analysed for frequency of endorsement of each item, for individual opinions distributed state-wise and party-wise, for correlation between self rating and scale rating. Tables I and II show the distribution of the individual opinions state-wise and party-wise respectively.

TABLE I

Showing Individual Attitudes distributed Statewise

States	0–1	1–2	2–3	3–4	4–5	5–6	6–7	Totals
Andhra		1	2	..	7	8	..	18
Assam		2	..	..	2	1	..	5
Bihar		3	2	..	15	2	..	22
Bombay . . .	1	3	..	1	6	12	..	23
Jammu & Kashmir . ..	..	..	..	..	..	1	..	1
Kerala		1	2	..	..	3	..	6

TABLE I—*contd.*

States	0–1	1–2	2–3	3–4	4–5	5–6	6–7	Totals
Madhya Pradesh. .	..	..	..	..	4	7	..	11
Madras . . .	..	2	1	..	2	5	..	10
Orissa . . .	..	1	..	1	2	3	..	7
Punjab . . .	..	1	..	1	2	3	..	7
Rajasthan . . .	..	..	1	..	5	..	..	6
Uttar Pradesh .	..	4	..	4	21	3	..	32
West Bengal . .	..	2	2	..	3	4	..	11
TOTAL .	1	20	10	11	72	45	..	159

TABLE II

Showing Individual Attitudes distributed Party-wise

Parties	No. of replies received	0–1	1–2	2–3	3–4	4–5	5–6	6–7	Group means
Congress .	118	..	..	..	9	65	44	..	4.76
Communist .	15	..	13	1	..	1	..	..	1.82
P.S. Party .	9	..	4	4	..	1	..	..	2.39
Jan Sangh .	2	..	..	..	..	2	..	..	4.62
Independents & others.	15	1	3	5	2	3	1	..	2.78
TOTAL .	159	1	20	10	11	72	45	..	16.37

The correlation coefficient between self-rating and scale-rating was .72 which showed that there was good deal of consistency between the two varieties.

General conclusions :

The following conclusions may be drawn from the study of the attitude toward Basic education as reported by 159 members of the Parliament.

(i) There exists a favourable opinion regarding Basic Education among the members of the Parliament who had responded to the request. Inferring on the basis of the results thus obtained, it may be said that the Parliament, on the whole, is favourable to the idea of Basic Education. The members being representatives of the people of India, a far fetched conclusion might be stated to be that the nation as a bigger unit is favourable to this system of education. In that case, even if the party in power is a different one, the Central Government may continue to be in favour.

(ii) Again this favourable attitude of the members of the Parliament included in this study, may be because of the fact that more than 70 per cent of them belong to the Congress group. Congress, as a party is strongly in favour of Basic Education.

(iii) Jan Sangh members though having an insignificant strength in the Parliament are favourable toward Basic Education.

(iv) Communist and Praja Socialist members show an unfavourable attitude.

(v) Independents show a more normal distribution of attitudes than any other group.

(vi) It is felt that the members of the Parliament have an apathetic attitude toward Basic Education in particular and education in general as they have not shown any interest in sending the replies.

(vii) In case the present representation of the different parties in the Parliament changes, there is a possibility of a change of government policy regarding Basic Education.

(viii) Again, it may be concluded, on the basis of this experimental study, that there exists a cleavage between the parties which belong to the right and left wings of the economy. The rightists are in favour of Basic Education, whereas, the leftists are opposed to it.

All the above conclusions involve in them a high element of probability, though the present position may be summed up as a favourable one.

An Investigation into the Pre-service Professional Preparation of Science Teachers for Secondary Schools in India

By Krishna Kumar

Purpose of the study :

The efficient science teaching is the hard pressed need of the country at all the stages, right through the schools to colleges and universities. It is even more important to teach Science effectively at the secondary stage. Unfortunately, at present, the teaching of Science in secondary schools is not being done, in the way it ought to be. Naturally the question arises : 'Is it due to the inefficient teachers ?' Obviously efficiency of the teachers depends upon their professional training. It means that inefficient science teaching in secondary schools is nothing but a reflection of the some shortcomings, prevailing in the training system of the prospective science teachers.

In this study, therefore, an attempt has been made to find out the present trends and practices in the programme of pre-service training of prospective science teachers for secondary schools in India, and to provide with suggestions for its improvements, based on an analytical interpretations of data and opinions received from the science lecturers of the Training Colleges, in the light of the views of eminent scientists, educationists, and the reports of various commissions and seminars published from time to time.

Procedure of the Study :

The normative survey method is followed in the present study. A questionnaire was framed and sent to the science lecturers of the Training Colleges to gather the required factual information for the survey. The questionnaire dealt with the following five sections :—

(A) The qualifications of the science lecturers, laboratory equipment and other facilities for the science trainees in the training colleges.

(B) The basis of the selection of the trainees, with particular reference to the science trainees.

(C) The programme of work followed in organising practice of teaching.

(D) Other sessional work—including handicraft and metal work, test construction, maintenance of laboratories and museums etc. Evaluation of trainees' competence in practical work.

(E) The programme of work followed in theory—which includes queries regarding the course on the methods of teaching of science, instructional programme in science methods, internal assessment in theory, library facilities, and lastly, the opinions of the science lecturers regarding the duration of training period.

48 science lecturers of the Training Colleges from various parts of the country responded with usable replies. Appropriate qualitative and quantitative techniques were used to analyse and interpret the data. Some of the significant findings that the data have revealed and the problems that have emerged from these are described briefly as follows :

Conclusions :

1. The science lecturers of the Training Colleges are mostly not qualified for their jobs. It has been found that only 21 per cent of the science lecturers are adequately qualified, and rest are lacking adequate qualifications in some way or other.

2. It has been found that 27 per cent of the Training Colleges are not able to provide the adequate facilities to their traineer to learn the art of demonstration, as they neither have separate Science rooms nor they are able to send their trainees to good practising schools having well equipped laboratories.

3. It is painful to note that 19 per cent of the Training Colleges do not have any sort of audio-visual equipment, *i.e.*, magic lantern, film projector, tape-recorder etc. Hence there can be no questions of providing the opportunities to the trainees to handle these instruments. It has been further noticed that some of the training colleges do not provide an opportunity to their trainees to handle them, even when the Training Colleges have these instruments at their disposal.

4. The number of science trainees in 48 Training Colleges offering science as a practice teaching subject is 21 per cent of the total number of trainees. The number of post-graduate science trainees is only 2 per cent of the number of the trainees who have offered science as a special subject. This small percentage include all those having master's degree in physics, chemistry, zoology, botany or some other branch of science, excluding mathematics.

Such a meagre percentage of post-graduate science teacher is not enough to meet the needs of higher secondary schools.

5. A majority of the Training Colleges select the trainees on the basis of their academic records and teaching experience. It is good that majority of the Training Colleges try to eliminate undesirable elements from entering the teaching profession, and use some other techniques also, *e.g.*, aptitude test, interview, vocabulary test in English etc.

6. It is sad that in 8 per cent of the Training Colleges the staff has nothing to say in the selection of the trainees. The trainees are nominated by the Director or the Department of Education.

7. Since a sufficient number of science graduates is not easily available, 94 per cent of the Training Colleges allow all the trainees to offer science on the basis of the (i) choice of the candidate, (ii) academic record in science, or (iii) both. They do not hold any test to estimate the competence and aptitude of the trainees.

8. It is sad, that in 85 per cent of the Training Colleges, only one science lecturer is engaged in the training programme of the science trainees. It is obvious, that he will be a specialist either in physical or in biological science, and therefore he cannot manage to do justice to the trainees, who do not happen to be the students of his subjects.

9. The trainees in 15 per cent of the Training Colleges teach only in demonstration schools, and 38 per cent of the Training Colleges have no demonstration schools attached to them, and the trainees teach only in the schools of the locality.

79 per cent science lecturers have reported that the teachers of the practising schools are more or less indifferent to the trainees, approach to the teaching of science, 6 per cent have reported that the practising school teachers disapprove the trainees' approach. Rest of the 15 per cent have reported that the practising school teachers do encourage and appreciate the trainees.

It has been found that in 50 per cent of the Training Colleges, the trainees do not observe the lessons of the school teachers. Moreover in 50 per cent of the training colleges practising school teachers do not share the supervision work of the trainees. All these indicate that there is not sufficient co-operation between the training colleges and practising schools.

10. In the opinion of 85 per cent science lecturers of the Training Colleges, the training of handicraft and metal work is necessary for science trainees. Yet, it is only in 50 per cent of the training colleges that some emphasis is given on handicraft only. As regards metal work, only 6 per cent of the Training Colleges have arrangement for such training.

11. The method of assessment for practical work vary from one Training College to another and the weightage given to the sessional work in science ranges from no weightage to 80 per cent.

12. It is only in 25 per cent of the Training Colleges, that they have separate paper on methods of science teaching, and in the rest of the Training Colleges it is only a part of a paper.

13. A provision of internal assessment in theory is made only in 19 per cent of the Training Colleges. The range of internal assessment in theory work is from 25 per cent to 50 per cent.

14. It is sad that 81 per cent of the Training Colleges have no open shelf library system, and for want of such library facilities, the lecturers are not able to use sufficiently dynamic methods of teaching, and more or less depend upon delivering the lectures.

15. It is a matter of regret to note that 33 per cent of the Training Colleges do not subscribe to a single periodical on the teaching of science.

16. 52 per cent of the science lecturers feel that the duration of training is too short, and it should be extended, at least to two academic years.

Limitations of the Present Study :

1. The investigator sent the questionnaire to 90 science lecturers of the Training Colleges of the different parts of the country. Only 48 lecturers responded with usable replies which comes to 53 per cent. The investigator records his note of regret on this lack of interest of Training College personnel in educational research. So it cannot be used for a representative sample of the entire population. Conclusions are to be taken as tentative only.

2. The genuineness of the responses is not confirmed.

Recommendations :

It has been referred earlier that the investigator intends to put also some recommendations, most of them are based on the analyses of the responses to the questionnaire and the suggestions by the lecturers in science in the Training Colleges, in the light of the recommendations of Tara Devi Seminar report, and the views of the other eminent educationists and scientists. A few important recommendations are given below :

1. *The Science Staff of the Training Colleges :*

(a) A science lecturer in the graduates training institute, should have (i) a Honour's degree or Master's degree in one of the science subjects, (ii) and a Master's degree in education with at least three years of teaching experience or an L.T., B.T. or B.Ed. degree with five years of teaching experience.

(b) Each Training College should engage at least two science lecturers, one specialist in physical science and other in biological science. The Staff of the science department should be adequately strengthened.

2. *Facilities for the Training of Art of Demonstration :*

Every Training College which makes the provision for the training of the science teachers, should have a well equipped laboratory where trainees can perform the experiments which they want to demonstrate in their practice lessons. Secondly, only those schools of the locality should be used as practising schools, having well equipped laboratories.

3. *Demonstration Schools :*

Every Training College should have an attached demonstration school, where the trainees, and staff of the Training College may experiment new methods and projects.

4. *Programme of Practice-teaching :*

(a) *Demonstration Lessons.*—It is desirable that in science at least 8 demonstration lessons should be given, by science lecturers of the Training Colleges and by some experienced science teachers of the locality. Demonstration lessons should not be given only before practice-teaching, but may be spread throughout the span of practice-teaching. Demonstration lessons should include some typical topics of both physical and biological sciences.

(b) *Supervision of Lessons .*—It will be more convenient and better practice, if the Science Staff of the practising schools is engaged in the supervision work. This will remove the misunderstanding between Training Colleges and practising schools, and will lead to a desirable cooperation between them.

(c) *Observation Lessons.*—Trainees should be required to observe the lessons of both the teachers of the practising schools and other trainees.

(d) *Audio-Visual Training.*—It is essential that the science laboratories of the Training Colleges should be equipped with the audio-visual instruments, and the trainees should get proper training to handle these aids. It ought to be obligatory for each candidate, to give at least two lessons or more with the help of the audio-visual aids.

5. *Other Sessional Work :*

Training Colleges should provide the science trainees with an opportunity to learn all such necessary aspects, which they do not learn in their degree course, *e.g.*, maintenance of museums, laboratories, botanical garden, preparations of charts, models, construction of achievement tests, handicraft and metal work.

6. *Evaluation of Trainees' Competence :*

A student's fate must not be assessed by a single examination hence it is necessary that sufficient weightage should be given for day to day lessons throughout the session. The most desirable

ratio between final lesson and sessional work is 1:1. Marks for the practice-teaching as well as for sessional work should be awarded jointly by the internal and external examiners.

7. *Theoretical work in Methods of Science Teaching :*

There should be one separate paper of 100 marks, on the methods of science teaching. The hundred marks for the paper should be divided into two parts

(*i*) Methods of teaching science 70 per cent, and

(*ii*) Sessional work in science 30 per cent.

8. *Methods of Instruction :*

There should be minimum of lecturing in the Training Colleges. The trainees should be initiated to undergo self studies, and for this there ought to be a provision of organized tutorials, discussions and seminars in the Training Colleges.

9. *Library Facilities :*

If a greater emphasis is to be placed on assignments and self studies, it is essential that the Training Colleges should have open shelf and well equipped libraries. The libraries should also contribute for science periodicals.

10. *Content Course in Science :*

So long as teachers of science with requisite qualifications and competence to teach general science are not available in sufficient number, Training Colleges may also provide "Content Course" in science which the trainees have not studied for their degree examination. There should however be no examination either external or internal, in the content course. A science graduate with physical science may be given a content course in biological science and *vice versa*.

11. *Duration of Training :*

The period of 9 months is too short for the training, it should be at least for two academic years. The Government should try to implement the recommendation made by the Secondary Education Commission.

An Investigation into the Achievements of Teacher Education in Nepal from 1955 to 1957, with Suggestions for Future Development

By K. C. Yadunandan

Purpose of the Study :

It is the purpose of this study to give a general summary of achievements of teacher education in Nepal in comparison with the teacher education in India. This comparative study indicates the points of similarity and dis-similarity in regard to certain aspects of teacher education The main object of this investigation is to give a picture of what is being done in the field of teacher education in Nepal in comparison to India and to analyse the features of teacher education in each of the countries to single out those outstanding aspects which have meaning and relevance to the other country. It is not only to survey the present condition of teacher education in Nepal, but also to investigate into the problems and find out their solutions for future development.

In this present study, the investigator has chosen India for his comparative study of teacher education in Nepal. Therefore, the problem can be defined in this way—"A Comparative Study of the Achievements of Teacher Education in Nepal and India from 1953 to 1958 with Suggestions for Future Development".

In India, the teacher training programme has had a marked transformation from teacher training to the present concept of teacher education as the cultivation of an educated mind with a sense of duty and of rights and citizenship both as an individual and as a member of the community. To emphasize the social significance of the new concept and to remove the connotation of the old one, the term "Teacher Education" has been coined to replace the old term "Teacher Training". Teacher education in both the countries, as conceived at present embraces not only the training aspect but also the other aspects of human living.

But in Nepal, teacher education has not gone so far like India, through a process of transformation. We hope that in the near future, teacher education in Nepal would be expanded in concept from the mere 'training' to the 'education' of the complete man.

In order to have the clear-cut idea of teacher education of both the countries—India and Nepal, the investigator has discussed a brief historical survey of 'Teacher Education in India

and Nepal.' Teacher education in Nepal is of recent origion, whereas in India, it has got its long history.

Generally, a problem of this kind is very broad. It is not possible for the investigator to cover all the aspects of teacher education within such a short period of time. So the present study has confined itself to certain selected aspects of teacher education.

The Procedure :

As the title of this study indicates the method employed in the present investigation is the so-called normative survey method plus historical method in which topological approach has been followed. Both past and present trends and events have been dealt with in this study. The investigator has followed both the questionnaire as well as interview procedures in collecting data. Besides these, he has followed the method of investigation which consists in the main of a critical analysis of available documents, books, reports, journals, periodicals and other literature relating to 'Teacher Education in India and Nepal.'

Scope of the Study :

The present problem under investigation has been classified in three broad aspects—

(i) Primary Teacher Training (Normal School) ;

(ii) Teacher Training for Undergraduate and Graduate Teacher and ;

(iii) Problems with Suggestions for Future Improvement of Teacher Education in Nepal in comparision to India.

In both the Primary and Secondary Teacher Training sections, the investigator has discussed only the major aspects of Teacher Education prevalent in India and Nepal.

They are as follows :

(1) The purpose, origion and the present programme.

(2) Curriculum.

(3) Instructional work.

(a) Theory.

(b) Practice.

(c) Supervision.

(4) Co-curricular activities and community work.

(5) Teaching Staff.

(6) Method of Assessment.

(7) Method of Selection.

Even these fields mentioned above cannot be dealt with in detail, only the main aspects have been chosen and investigated. The investigator, in these sections, has interpreted the collected data and has discussed the similarities and dis-similarities that have occurred between India and Nepal in the field of teacher Education.

Lastly, the investigator has examined some of the outstanding issues and problems which have to be faced by those who are engaged in the task of working out a curriculum and technique for Training Colleges. It is obviously impossible to do full justice to them in the course of a single chapter. But while the details are numerous and complicated, there are a few major problems and difficulties which are common to, and beset all normal schools and secondary training institutions and which require concerted and clearly thought out action.

As regards the problems, the investigator has dealt with the training institutions of Nepal, which is the main part of this report and for suggestions he has consulted the Indian, American and English system of teacher education. But specially the Indian system of teacher education would help him more in this respect rather than the latter two. The following are the main fields in which the investigator has discussed the problems and found out solutions :—

(1) Selection of trainees.

(2) Curriculum.

(3) Methods of teaching.

(a) Theory.

(b) Practice.

(c) Supervision.

(4) Co-curricular activities and community development.

(5) Method of assessment.

(6) Teaching staff.

(7) Administrative aspect.

(8) General aspect.

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An Investigation into the Relationship between Vocational Preferences and Curricular Choice at the Higher Secondary Stage

By K. K. Gupta

Purpose and Scope of the Present Study :

The present investigation was undertaken to find out the extent in which the pupils of the Higher Secondary Stage are conscious of the problem of selection of the right type of groups of subjects and the bearing that such a selection has on their vocational goals. It was aimed at ascertaining the following :—

(1) Do the pupils at the Higher Secondary Stage make a choice of the educational courses consistent with their expressed vocational goals ?

(2) Do these adolescents have enough occupational information in their possession ?

(3) What is the basis on which occupational choice is generally made ?

(4) How far are the choices valid on the basis of the principle of vocational guidance ?

(5) What are the differences, if any, existing between the expressed vocational interests of pupils having higher educational attainments as against those with lower educational attainments ?

(6) What suggestions can be made for better guidance of the pupils in the sphere of their educational and vocational selection ?

On the basis of the information available, it would be examined whether it is enough to provide educational and vocational guidance to the pupils alone, or the parents and teachers also are in need of some orientation in this respect. In case, guidance programme is to be enlarged so as to include within its purview, guidance to parents and teachers, then steps in this direction can be taken in order to make it more effective and of some practical utility to those concerned.

Delimitation of the Problem :

The scope of the investigation had, of necessity, to be delimited to a considerable extent so as to include the following :—

1. Only four Higher Secondary Schools—two representing New Delhi area and the other two representing Old Delhi area were taken up.

2. Three hundred and eight pupils of class X were taken up on the basis of random sampling. It was felt that at the Xth class stage, there is some likelihood for the educational and vocational interests of the pupils to be stabilised.

3. The investigation has been confined to boys alone.

4. The distribution of pupils with regard to the groups of subjects studied is represented by means of a table as given below :—

TABLE I

Distribution of the pupils group-wise in different institutions

Institutions	Group A (General/ Arts & Social Sciences)	Group B (Natural Sciences)	Group C (Commer-cial)	Total
A	17	25	21	63
B	31	31	30	92
C	24	34	30	88
D	26	39	..	65
TOTAL .	98	129	81	308

The Mean age of the pupils was found to be 16·68 years with a standard deviation of 2·49.

Procedure Followed :

The nature of this inquiry called for a normative survey type of research. A questionnaire was constructed for the purpose of collecting the data. The questionnaire was divided into the following four sections.

Section A :

This section dealt with the indentifying data about the pupil. It concerned with the name of the respondent, his date of birth, class and section, name of the school, register number etc.

Section B :

It dealt with the vocational preferences of the pupil. Thein choices were to be given in order of preference. He was asked to indicate the reasons which led him to make the choice, *e. g.*

advice by parents, friends or relations, monetary considerations, prestige value of the vocation, independence, security, comfort and the like. He was also asked to give the professions in which his father, mother, brothers and sisters and other relations were engaged, together with the monthly income of the family.

Section C :

This section related to the subjects studied by the pupil: subjects liked most and the subjects not-so-liked or disliked with reasons in each case.

Section D :

Leisure time activities of the pupil, hobbies, games and sports in which he participated were sought for in this section.

The questionnaire was administered personally by the investigator. The actual administration was preceded by a brief talk with the Principal of each institution with a view to explain the purpose of the investigation and to enlist his cooperation. In the class room, a brief talk was given to the pupils in order to establish necessary rapport and to remove the test-consciousness and misgivings that they seem to feel at such occasions.

Summary of the Findings :

(1) Pupils studying in Group A come from poorer home-background. Those in Group C are drawn from more well-to-do-homes while those in Group B come from the most economically well-off homes.

(2) The highest percentage of parents are engaged in business. Second in order of rank are clerical and related occupations. Professions falling under categories of social service and law & government are third and fourth respectively. Other professions in which parents are engaged are in the following order:

Manual, Agriculture, Managerial, Teaching, Scientific, Mechanical & Technical, Military, Artistic and Literary.

(3) Whereas above 96 per cent of the pupils in Group B and Group C intend to go in for further education after Higher Secondary stage, only 57·1 per cent of those studying in Group A, have such expectations.

A larger percentage (12·2 per cent) of pupils in Group A have not been able to decide in this regard. As against this, only 1 per cent from Group B and none from Group C are undecided.

(4) Surprisingly enough, it is found that as many as 73·3 per cent of the pupils have vocational preferences consistent with their courses of instruction. Group-wise distribution is given below :

TABLE II

Group	Percentage of pupils having vocational aims consistent with curricular choice.	Percentage of pupils having vocational aims not consistent with curricular choice]
A. (General Arts and Social Sciences)	65.3	34·7
B. (Nature Science)	88.0	12.0
C. (Commercial)	66.8	33·2

It is to be noted, however, that what is true of pupils studying in Delhi Schools, may not be true for others studying elsewhere. Guidance programme is urgently needed for pupils who are not so fortunately located.

(5) *Occupational information in pupils possession*—The following are the categories of vocations with high or low concentration of aspirants, in order of rank :

TABLE III

Categories with high concentration of pupils	Categories with low or no concentration of pupils
1. Protessional, Technical and related occupations.	1. Farm and farm managerial occupations.
2. Administrative, Executive and Managerial occupations.	2. Mining, quarrying and related occupations.
3. Clerical and related occupations .	3. Transport and Communication occupations.
4. Sales occupations . . .	4. Production process,. crafts and related occupations.
5. Service, Sports and recreational occupations.	

It can be safely assumed that among other reasons, ignorance about the vocational areas with low concentration of aspirants is one of the major factors.

TABLE IV

Sl. No.	Occupational Category	Group A	Group B	Group C	Whole Group
1	2	3	4	5	6
1.	Professional, Technical and related occupations.	35·7	79·9	6.2	46.4

1	2	3	4	5	6
2.	Administrations, executive and managerial occupations.	27.6	3.8	25.9	17.2
3.	Clerical and related occupations.	2.0	..	33.3	9.4
4.	Sales occupations . .	15.3	6.2	25.9	14.3
5.	Farming and Farm managerial occupations.	1.0	0.3	1.2	1.0
6.	Mining, quarrying and related occupations.	..	..	..	..
7.	Production process, crafts and related occupations.	..	..	..	..
8.	Transport & Communication occupations.	..	..	..	..
9.	Service, Sport and recreational occupations.	18.4	9.3	7.5	4.7
		100.0	100.0	100.0	100.0

Table V

Frequency Distribution Showing Reasons for making Vocational Preferences (in Percentages)

Sl. No.	Reasons	Group A	Group B	Group C	Whole Group
1	2	3	4	5	6
1.	Parents' advice . .	25.5	14.7	14.8	18.2
2.	Relatives' advice . .	8.1	6.9	11.3	7.8
3.	Friends' advice. . .	1.0	..	..	0.3
4.	Monetary Considerations .	16.3	16.4	16.3	16.5
5.	Prestige Value . .	14.2	13.3	8.8	12.4
6.	Independence . . .	7.2	3.9	8.8	6.2

1	2	3	4	5	6
7.	Patriotic Sentiments .	9.1	10.2	7.5	9.1
8.	Comfort	2.1	1.6	1.3	1.6
9.	Social Service . . .	2.1	4.3	6.2	4.2
10.	Family occupation . .	3.1	2.4	6.2	3.6
11.	Natural liking . . .	11.2	12.5	7.4	10.7
12.	Security	2.1	..	..	0.6
13.	Considerations of Scope and demand.	..	6.9	3.9	3.9
14.	Suitability due to curricular choice.	..	6.9	7.5	4.9
	TOTAL .	100	100	100	100

(6) The foremost factor influencing pupil's choice of profession is parental advice which accounts for 18·2 per cent of the choices. Monetary considerations and prestige value of the vocations are second and third respectively.

Other factors in order of rank are : natural liking, relation's advice, considerations of independence, suitability due to educational course studied, social service, scope and demand, ancestral occupation, comfort, security and friend's advice.

An Investigation into Subject Preference and Attitude Patterns of Class X Pupils in Delhi with regard to Certain Secondary School Subjects

By M. R. Anganu

I. Introduction :

A. The Problem :

The present study seeks to discover the preferences and attitudes of Class X pupils in Delhi with regard to six subjects in the secondary school curriculum namely, English, Hindi, Mathematics, Geography, History and Science. The study also seeks to determine the nature and extent of the relationship between subject preference or attitude and other variables.

Specifically, the present investigation seeks to answer the following questions :

(1) Which of the six school subjects do Class X pupils like? Which subjects do they dislike ?

(2) What is the relative popularity of the six subjects among Class X pupils ?

(3) What are the reasons for the popularity and unpopularity of school subjects among Class X pupils ?

(4) What is the attitude of Class X pupils toward each of the six subjects ?

(5) How is attitude toward each of the six subjects related to attitude toward other subjects ?

(6) Are there significant differences in the subject preferences or attitudes of boys and girls in Class X with regard to each of the six subjects ?

(7) How do the attitudes of bright pupils compare with the attitudes of dull pupils in Class X ?

(8) What is the relationship between attitude and (i) scholastic achievement, (ii) teachers' ratings of pupils' attitudes ?

B. Importance of the Problem :

It was felt that this study might make a significant contribution to the problem of curriculum for Indian secondary schools. In the first place, the interest questionnaire and generalized attitude scale developed in this investigation will provide teachers and administrators as well as educational and vocational counsellors with a simple and ready instrument by which to determine

the affective pattern of pupils for any given subject. In the second place, the information gained about pupil's preferences and attitudes with regard to the six subjects may offer some guidance to teachers and other persons responsible for framing syllabi although there is no intention to suggest that children's likes and dislikes or attitudes should be the only, or even necessarily the main criterion in determining the make-up of the curriculum in Delhi secondary schools.

C. Definition of Terms :

As used in this study, 'subject preference' refers to liking of one subject better than another, as revealed by the preference questionnaire constructed by the investigator.

'Attitude' is used in the present study in the sense of tendency or predisposition—mental or emotional—to react either favourably or unfavourably toward some object or class of objects, material or conceptual in nature.

D. Delimitation of the Study :

The present study was limited to the consideration of subject preferences and attitudes with regard to only six school subjects—English, Hindi, Mathematics, Geography, History and Science. The preference questionnaire used in this study was limited to the following procedures of determining subject preferences : (1) first choice, (2) rank order of preference, and attitudes, (3) check list. The study of attitudes was limited to the results of the application of the Generalized Attitude Scale which, like the Preference questionnaire, was constructed by the investigator for the purposes of the present study. The investigation of the relationship between other variables was limited to the consideration of only the following variables : sex, scholastic achievement and teachers' ratings of pupils' attitudes. 'Scholastic achievement' was limited to marks obtained by the pupils in the last examination in the subject concerned.

II. Related Studies :

Pritchard in 1935 found that with boys in the secondary schools Chemistry comes first as best liked subject followed by English and History ; with the girls, English stands first, followed by History and French. The least-liked subject with the boys is Latin ; with the girls, Geometry. Pritchard also found that interest and proficiency are the common reasons given by students for liking a subject. David Jordan in 1941 reported an investigation into the attitude of pupils to certain school subjects and found that English ranks first, with Geography and Mathematics coming second and third, respectively.

In the United States, several investigators have found similar patterns of sex differences in subject preference. Boys more often than girls prefer Mathematics, Science and the Social Studies ; with the girls, English is far more popular.

III. The Tools, Techniques and Procedures :

A. The Tools :

The principal tools employed in the present investigation were : (1) A preference-attitude and (2) a rating scale. The Preference-Attitude questionnaire consisted of three parts. Part I contained factual questions on age, sex, etc. Part II contained preference questions which required pupils to (1) state the subject liked best and the subject liked least, and their reasons for stating so ; (2) indicate whether they like, dislike or are indifferent to the subjects listed, and (3) rank the six subjects in order of preference. Part III consisted of a Generalized Attitude Scale. The attitude scale consisted of a list of 30 statements expressing varying degrees of favourableness or unfavourableness toward any subject. The pupil is required to check those statements which express his own attitude or feeling toward the subject being considered.

The rating scale contained a list of pupils' names followed by five columns representing five categories of attitude toward a subject : (1) very favourable, (2) favourable, (3) neutral, (4) unfavourable, (5) very unfavourable.

B. The Techniques :

The statistical techniques used in the present study involved the following statistical measures : means, medians, standard deviations, percentages, standard errors and critical ratios. These statistical measures were used in finding the relative popularity and unpopularity of school subjects, and finding the significance of differences in preference or attitude between boys and girls and between high achievers and low achievers.

Correlation coefficients were computed to determine (1) the reliability and validity of the attitude scale and (2) the nature of interrelationships among attitudes toward the six subjects.

C. Procedures in the Collection of Data :

The Sample.—The subjects used in this study were 333 Class X pupils, (187 boys and 145 girls), from nine secondary schools in the city of Delhi. The age range of these subjects was from 13 to 18 years. The schools participating in the study were of three kinds : girls' school, boys' school, and mixed school.

Administration and Collection of the Questionnaire.—Cyclostyled copies of the questionnaire were administered by the investigator during the normal class period, with the help of the class teacher.

Collection of Other Data.—Teachers' ratings of pupils attitudes were obtained by means of the rating scale which was given to the class teacher of the pupils concerned. The data on achievement in the subjects concerned were provided by school marks which the investigator obtained from the school records.

IV. The Construction of the Generalized Attitude Scale.

The construction of the Thurstone-type Generalized Attitudes Scale involved the following steps :

(1) Collection of a large number of statements expressing varying degrees of attitude toward any school subject.

(2) Editing and selection of statements for the initial listt.

(3) Rating of the statements by a group of judges as to the degree of favourableness or unfavourableness toward any subject expressed by each statement.

(4) Calculation of the Scale and Q values for each statement by taking the median and interquartile range, respectively of the distribution of judgments for this statement.

(5) Building the attitude scale by choosing 30 statements which have low Q values and whole scale values cover the entire range of the scale as evenly as possible.

Two equivalent forms, I and II, were prepared by selecting 30 pairs of statements of which the scale values and Q values were as nearly as possible identical.

The reliability of the scale was determined by correlating scores of Form I with those on Form II for 95 Class X pupils who were administered both forms of the scale. The reliability of coefficients (product moment correlation coefficients) for the six subjects range from 0·77 (History) to 0·93 (Hindi).

To obtain evidence on the validity of the scale, pupils' attitude scores were correlated with teachers' ratings of the attitudes of the same pupils, for three subjects. The validity coefficients obtained (English—·68, Mathematics—·75 and Science—·76) were considered satisfactory for the limited purposes of the investigation.

A further evidence of the validity of the scale was obtained by comparing the mean attitude scores of "high" achievers with those of "low" achievers. The differences between the two groups were found to be highly significant.

V. Plan of the Statistical Analysis of the Data :

The plan for the statistical analysis of the data obtained by means of the tools used in the present investigation included two major phases : The first phase was concerned with subject preferences of Class X pupils as revealed by (1) like-dislike-indifferent responses to Item No. 13 of the Preference questionnaire,

(2) responses as to subject liked best and subject liked least; (3) reasons for liking or disliking a subject, and (4) pupil rankings of the six subjects in order of preference.

The second phase in the statistical analysis was concerned with the study of attitudes of Class X pupils toward each of the six subjects, as revealed by scores on the Generalized Attitude Scale. This phase of the analysis proceeded through four analytical steps : (1) analysis of the frequency distribution of mean attitude scores for each of the six subjects, and the resulting order of preference deduced from the mean scores ; and (2) analysis of the differences between attitudes of girls and boys; and (3) comparison of the attitudes of "high" and "low" achievers ; and (4) study of the intercorrelation of attitudes toward the six subjects.

VI. Summary of Results :

(1) Of the six subjects, English, Science and Mathematics were found to be more popular, on the whole, with Class X pupils than are the other three—History, Geography and Hindi.

(2) The most popular subjects on the basis of "like" percentage are English, Science and Mathematics and the most unpopular, on the basis of "dislike" percentage, are Geography, History and Hindi. With pupils actually taking the subjects however, Geography is more liked than is true with the general group.

(3) Among the boys the most popular subject (on the basis of "like" responses) is English, followed by Science and Mathematics ; among the girls, Science followed by Mathematics and English. More of the boys like English than is true with the girls, and more of the girls like Mathematics and Hindi than is true with the boys. More of the boys dislike English, Mathematics and History and more of the girls dislike Geography.

(4) Among pupils actually taking the subject the most popular subjects are Science, English and, in the case of the boys, Geography, and in the case of the girls, Mathematics. Mathematics is more unpopular with boys taking the subject than with the girls. History is last in the popularity list of both boys and girls taking the subjects as well as in that of the combined group.

(5) Mathematics, Science and English are mentioned as subject liked best by more pupils than are the other three subjects. Mathematics ranks first as the best-liked subject and Geography, first as the least-liked subject. More boys than girls mentioned English, Science and Mathematics as best-liked subject and more girls than boys mentioned Geography and Hindi.

(6) Among the boys in the entire group, English comes first as the best-liked subject, followed by Mathematics; among the girls, Scince followed by Mathematics. Hindi is consistently placed first as the least-liked subject by both boys and girls.

(7) The data on pupil rankings of the six subjects show that English, Science and Mathematics are ranked within the first three positions by the entire group as well as by the boys and girls. Geography is ranked very low by the three groups, while Hindi and History are ranked next to bottom.

(8) Class X pupils are, on the whole, more favourable toward Science, English and Mathematics than toward History, Hindi and Geography. Science ranks highest in mean attitudes score followed by English and Mathematics. Hindi and Geography share the lowest position in mean score. There are no significant differences in attitudes between boys and girls, except in the case of English and History where the attitude of the girls was found to be more favourable than that of the boys.

(9) "High" achievers have significantly more favourable attitudes toward their subjects than "low" achievers.

(10) There is high correlation between pupils' expressed attitudes and teachers' ratings of pupils' attitudes.

(11) Attitudes are positively correlated to a marked degree in the case of Science and English, and Geography and History. Of the negative correlations, the most significant are those between History and Hindi, Geography and Mathematics, and History and Science.

Included in the first phase of the analysis, but deferred to this section for purpose of convenience in reporting the results, is that part of the investigation concerned with reasons for liking or disliking subjects, or for the popularity and unpopularity of school subjects among Class X pupils. Each subject is dealt separately, with pupil's own responses as the basis.

Practically all pupils liking English say that English is a useful subject to learn, as it is a world language. Pupils find it easy to learn. Another reason for liking the subject is that they have good teachers in the subject. Of the reasons advanced for disliking English the most commonly mentioned ones are : "English is a foreign language, and is not our language, hence we should give least credit to it". Other reasons for disliking the subject include "no good teacher", 'it is difficult', and the text books used are far above their comprehension.

Of the reasons advanced for liking Hindi, the more frequent ones are that 'it is our mother tongue', 'there are many books to read', 'being a national language everybody should study it.'

More outstanding as reasons for disliking Hindi concern the fact that there are many hard words in the language which makes it difficult for pupils to understand and that pupils do not usually get good marks in this subject.

Mathematics is liked by the pupils on the ground that it is interesting and is a practical subject. Pupils think that it is a useful subject. Furthermore, pupils get good marks on this subject. Mathematics is disliked on the ground that it is 'boring and difficult.' Pupils find it time-consuming. Those who are weak in the subject complain that they cannot understand many things about it.

The reason more commonly advanced for liking Geography is that it imparts knowledge about the world. Pupils liking it find it easy to learn. On the other hand, Geography is disliked on account of "too difficult textbooks" and "no good teacher". Pupils find it dull.

Pupils liking History advance the following reasons in favour, of the subject. "It is interesting", "there are many good books to read". Those who dislike the subject dislike History on account of its emphasis on the past. History, furthermore, is not a scoring subject.

Pupils like science for they can learn in this subject many things about animals and plants. They find the teachers good and the teaching simple and easy to understand.

Those who dislike science find it difficult. The apparatuses for the subject are inadequate. Moreover, in the case of Chemistry, there is plenty of cramming to do.

A Study of the Variety of Practical Work Provided for Pupil Teachers in Some Selected Teachers' Colleges in India

By M. R. Gupta

Importance of the Study :

The importance of an investigation like this is obvious today when most of the teachers' colleges of the country are going to re-organise their courses of studies in the light of recommendation made by the fourth Conference of Principals of Teachers' Colleges held at Bangalore in June, 1957. The draft revised syallubs prepared by the Ministry of Education, Government of Indila incorporating those recommendations is being critically studied by teacher educators and administrators for implementation.

As the main concern of this study will be to ascertain the prevailing practices and conditions of practical work in teachers colleges, it will enable the different institutions to become aware of some of their shortcomings and deficiencies. This type of information will be particularly important for the administrators who would like to compare their practices with others. They will have their attention called to the superiority of other systems in certain aspects. It is also expected that different teachers' colleges will get the opportunity for making a realistic evaluation of their own programmes and will serve to stimulate the desire to improve the existing programmes, facilities, etc. Moreover, the investigator's association with a teachers' college has made him feel the great importance of such an all-India investigation which, to the knowledge of the investigator, has not so far been attempted successfully.

The main purposes of the investigation are:—

(i) to have a clear picture of the kind of practical training that is being imparted at present to student teachers throughout the country in different teachers' colleges ;

(ii) to study the relative weightage given to theoretical and the practical parts in the courses of study ;

(iii) to help in the evaluation of the adequacy of practical work ;

(iv) to ascertain the considered suggestions and opinions of the principals of teachers' colleges regarding different aspects of practical work ; and

(v) to find out the reaction to the practical part of the curriculum from a group of student teachers who have undergone a course of training recently in a teachers' college.

Scope of the Investigation :

An attempt will be made to study the provision of different kinds of practical work in the teachers' colleges throughout the country in the programmes of pre-service teacher education. Broadly speaking, practical work will be of two types :

(i) Compulsory practical work that must be provided in order to fulfil the requirements of the examining body; and

(ii) other practical work and co-curricular activities that have been provided by the institutions themselves in the teacher education programmes.

It will not be within the scope of the present investigation to study the practical work provided in the Basic teachers' colleges. In finding out the relative weightage given to the theoretical and practical parts of the course both marks and hours of work will be examined.

Different aspects of practice teaching, practical school assignments, psychology practicals, preparation and use of audio-visual aids, excursions and camping, physical education and other cultural group activities will be examined. The opinions and suggestions of the heads of teachers colleges with reference to the above activities will be considered. The reaction of a group of students who have gone through a regular course of training towards the practical part of the course will also be found out.

Procedure of the Present Study :

The questionnaire procedure was mainly used as it was not possible to meet personally the principals of teachers' colleges throughout the length and breadth of the country.

A comprehensive questionnaire, consisting of eight sections, was carefully prepared and sent to all the principals of non-basic teachers' colleges of the country in order to find out the prevailing volume and variety of the provision of practical work in the different institutions. After the replies had been received, another supplementary questionnaire was prepared on the basis of the first questionnaire and was sent again to all the responding principals with a view to know the personal opinions and suggestions in connection with the provision of practical work irrespective of the practices prevailing in their institutions. This step was considered important as it was felt that if opinions were invited in the same questionnaire, many heads of the institutions might have been prejudiced by their own practices which they were asked to give. So the supplementary questionnaire inviting their opinions and suggestions was sent after three months.

The investigator wanted to find out also the reactions and opinions of a group of students who had recently undergone a course of training in a teachers' college with reference to practical work. Therefore a third questionnaire was prepared and was given to the students of the Central Institute of Education who appeared in the B.Ed. examination in 1958. As the investigator was keen in getting free and frank replies from the students, the questionnaires were sent to them after the B.Ed. Examinations were over.

The investigator had also a number of interviews with the Evaluation Officers in the office of the All-India Council for Secondary Education. These officers were interviewed mainly because they were drawn from the teachers' colleges situated in the different parts of the country and much significant and valuable information emerged out of those interviews.

A comprehensive questionnaire, consisting of eight sections *viz.*:—

A. Weightage given to practical work;

B. Practice teaching;

C. Study of the practising school;

D. Psychology practicals;

E. Audio-visual aids;

F. Excursions and camping ;

G. Physical education;

H. Cultural group activities

was sent to all the principals of teachers' colleges in India numbering 117 with a request to return the questionnaire duly filled in. The list of colleges was obtained from the All India Council for Secondary Education. Out of these 117 principals, 82 or 70 per cent co-operated in this study and returned the questionnaires properly filled in. This number includes 15 exclusively women's colleges, 13 exclusively men's colleges and 54 co-educational institutions, drawn from all the States of the Indian Union. The number is not only statistically significant but is also a good representative sample. There is no uniformity in the number of students admitted in the different colleges. It is suprising to find that in some teachers' colleges more than 200 students are admitted for the pre-service training while in others less than 30 are admitted. In one college in West Bengal 286 students have been admitted during 1958-59 and in another college in Madras only 22 students have been admitted. The responses received from the different States are shown on the next page.

Sl. No.	States	Total number of Teachers colleges	No. of replies received
1	2	3	4
1	Andhra Pradesh	9	9
2	Assam	1	1
3	Bihar	3	1
4	Bombay	15	13
5	Delhi	2	2
6	Himachal Pradesh	0	0
7	Jammu & Kashmir	3	1
8	Kerala	6	5
9	Madhya Pradesh	6	5
10	Madras	15	13
11	Mysore	6	4
12	Orissa	1	1
13	Punjab	18	8
14	Rajasthan	2	2
15	U.P.	22	13
16	West Bengal	8	4
		117	82

The replies received from the principals of 82 teachers' colleges were subjected to a careful analysis, the results of which are summarised below :

The Findings :

1. Many of the teachers' colleges have provided a large number of practical activities for their student teachers within a short period of eight or nine months.

2. Courses in teacher education in most of the universities are not so much overweighted to-day on the theoretical side as was the case eight or ten years back. Forty per cent of our teachers' colleges earmark 44 per cent of total marks for the practical part only. Sixty-five per cent of principals of teachers' colleges suggest equal weightage in marks and hours of work for theory and practice.

3. Among the items of practical work ninty per cent of colleges provide fifty per cent or more marks for only practice teaching The minimum percentage of marks required to pass the practical part is usually higher than that required for theoretical part. Fifty-two per cent of the principals suggest that the minimum percentage of marks required to pass the practiccal part should be higher than the theoretical part.

4. In all teachers' colleges the student teachers have to pass separately both in theory and in practice. The practice of placing successful candidates in three classes—first, second and third—is the most common.

5. There is a definite tendency among the teachers' colleges to-day to earmark a percentage of the total mark for the practical part which will be assessed internally by the teaching staff.

6. To-day sixty per cent of our teachers' colleges have at least one secondary school under the direct control of the training colleges for practical work and educational experimentation.

7. A large percentage of principals (varying from 50 per cent to 94 per cent)have suggested that the following items of practical work besides practice teaching should be made compulsory for all student teachers:

(i) physical education and games, (ii) preparation and use of teaching aids, (iii) psychology practicals, (iv) co-curricular activities, (v) arts and crafts, (vi) construction of new type tests, (vii) social service and citizenship training, (viii) educational excursions and field trips, (ix) one case study, (x) measurement and diagnosis and (xi) tutorials and seminars.

8. Two prominent tendencies are noticeable in the arrangements for practice teaching for student teachers—(a) the following of the 'spread' system of two or three days a week to be rounded off by a final block of practice teaching and (b) continuous teaching for six to ten weeks. Twenty-eight per cent of the principals support either of the two arrangements. Sixty-six per cent of the student teachers of the Central Institute of Education, Delhi, support practice of having practice teaching for 2 alternate days in a week for the first 2 terms and 2 weeks of block teaching during the final term.

9. In 88 per cent of teachers' colleges the student teachers are required to teach two school subjects during the period of practice teaching. Eighty-seven per cent of the principals support the practice.

10. Thirty per cent of the colleges prescribe 30 as the minimum number of practice lessons for student teachers which has been supported by 31 per cent of the responding principals.

11. Thirty per cent of the principals suggest that only 50 per cent of the practice lessons need to be supervised.

12. All teachers' colleges to-day require their student teachers to 'observe' some lessons along with practice teaching. Ninty-three per cent of the principals suggest that every student teacher should be asked to observe a few lessons before he is allowed to go for class teaching.

13. The final examination of a student's teaching is given greater weight than his teaching throughout the year. Fifty-seven per cent of the principals suggest that the most satisfactory procedure of evaluating the final examination lessons is by appointing one external and another internal examiner who will jontly assess each candidate in each school subject.

14. At present 51 per cent of teachers' colleges require the student teachers to organise and participate in the co-curricular activities of the practising schools. Eighty-seven per cent of the principals consider it essential for the proper preparation of student teachers.

15. There is some provision for psychology practical work in only 40 per cent of teachers' colleges. Seventy per cent of principals recommend that all student teachers should take up psychology practical work.

16. Only 32 per cent of our teachers' colleges require their student teachers to prepare a 'case study' of a child as a part of their practice teaching. Sixty-seven per cent of principals support this.

17. To-day eighty–eight per cent of teachers colleges provide some training in the preparation of some visual aids. This has been recommended by all the principals.

18. Sixty–seven per cent of colleges have a regular programme of showing educational films and filmstrips, and 78 per cent of the principals recommend this.

19. 83 per cent of training colleges provide facilities in the organization of at least one excursion during the session.

20. In 71 percent of training colleges physical education is compulsory. This has been supported by 83 per cent of the principals.

21. 32 per cent of the training colleges have introduced the 'house system' and have organized sports, games and other cultural activities on the basis of 'houses'. 67 per cent of the principals recommend this.

22. Facilities are provided by 68 per cent of the colleges in the form of tutorial classes, seminars or subject associations where student teachers can take part in group discussions.

The Administrative Problems of the Headmasters of Government High Schools in Ferozepore & Hissar Districts of the Punjab

By M. D. Jain

Introduction :

Before the attainment of Independence there were very few Secondary Schools in the rural areas, particularly in the Districts of Hissar and Ferozepore in the Punjab. After Independence the District Boards started many High Schools in the Villages. Due to the poor financial conditions of the District Boards, the schools were not properly maintained. The headmasters and teachers were handicapped in teaching for want of proper buildings and equipment. In order to improve the quality of education and conditions of teachers, the Punjab Government has provincialised all the local body schools with effect from Oct. 1, 1957. Since the number of Government schools has increased considerably and Headmasters, in this transitionary period, are experiencing many difficulties so the purpose of this study is to investigate the problems of the Headmasters of the Government High Schools in Hissar and Ferozepore District of the Punjab.

Present Procedure :

The questionnaire and interview techniques were used in the study. Out of the 98 schools in all, 60 responded to the questionnaire and 26 headmasters were interviewed. The study is based on 70 independent responses because out of 26 headmasters interviewed, 10 were those who did not respond to the questionnaire.

Before preparing the questionnaire, on the basis of some seminar reports, the investigator made a general list of the problems faced by the headmasters. Keeping this list in view, an outline of the questionnaire was prepared and discussed with some of the experienced headmasters. This discussion not only helped the investigator to focus his attention on relevant questions and making the questionnaire comprehensive, but also proved useful in weeding out certain irrelevent questions and unnecessary fields of inquiry. The final questionnaire was prepared in the light of these discussions. The questionnaire was divided into following parts that cover various aspects of the school, having direct bearing on the administrative problems of the headmasters: the headmaster, the teachers, relations of the headmaster, the teachers, and the students, relations with the inspectorate, relations with community, examinations, school office and finance, school building and hostel, games and fields, laboratories and library, and co-curricular activities.

Conclusions :

On the basis of the data collected the following conclusions have been reached.

A. Headmaster :

1. The Headmasters of the Government High Schools, particularly of the recently provincialised schools are of very young age. They have only a few years of teaching experience. Most of the headmasters in all the schools are only trained graduates.

2. There are wide differences in the pay scales of the headmasters. Some of the Headmasters are working in the grade of Rs. 110-8-190-10-250. On the whole, pay scales are not attractive.

3. In many schools permanent Headmasters have not been appointed. Senior masters have been officiating since provincialization. The work of these schools is seriously suffering.

4. The tendency of the Headmasters is to try to get themselves transferred to urban schools. 80 per cent of the headmasters do not want to serve in the villages.

5. Most of the Headmasters have not been able to keep in touch with the new developments in education.

B. Teachers :

1. Some posts in all categories of teachers, are lying vacant. Some untrained teachers are working against the permanent vacancies for trained teachers. Many schools require additional posts to be sanctioned.

2. There are proportionately more trained graduates in the old Government Schools than in the provincialized schools.

3. Most of the language teachers and physical training instructors are untrained. They hold special certificates obtained after putting in 3 years' service.

4. Teachers serving in rural schools do not find suitable residential accommodation. Most of them are putting up outside the place of their duty and are generally not available for out-of-school hours activities.

5. Teachers in most of the girls' schools have an unreasonably heavy load of work, 40 out of 45 periods per week.

C. Supervision and Staff Relations:

1. Most of the Headmasters find little time for supervision of teaching work. Some of them do not supervise at all. Others simply go round the school to see whether or not teachers are in

their classes. Class room observation of the lesson even for a few minutes is rare. Their visits are generally resented by the teachers.

2. Suggestions of the Headmasters are not generally welcomed by the teachers.

3. Headmasters get varying degree of cooperation from the teachers.

4. In some of the schools there are antagonistic parties. They try to create difficulties for the headmasters. Influence of local political leaders is a serious factor herein.

D. Students and Activities :

1. There is severe problem of over-crowding in the urban schools.

2. Only half of the schools provide some sort of hostel accommodation. Hostels of urban schools areover-crowded.

3. Common forms of indiscipline in the schools is, irregularity in home work, irregular attendance, truancy and class room indiscipline. The chief factor responsible for indiscipline are, uncongenial out-of-school environment, poor economic condition of the family, unsympathetic attitude of the teachers, and faulty method of teaching.

4. More than half of the schools do not have sufficient play grounds. Some do not have them at all.

5. Though many activities are provided in the schools yet they are not properly organised to serve the useful purposes.

E. Examinations :

1. Stress on the results in the public examinations has affected classification of students. It has led to large number of failures in IXth and VIIth Classes.

F. School Office :

1. None of the rural schools that have recently been provin cialised have a clerk.

2. In all the schools teachers have to do office work.

G. Inspectorate :

1. 80 per cent of the schools have not been inspected during the last 3 years, 45 per cent have not even been visited.

2. Generally the suggestions made by the Inspector at the time of inspection are theoretical and most of the teachers do not try to put them into practice.

3. Inspectorate does not help the Headmasters in solving their problems and getting the work done from the D.P.I.'s office.

H. Community :

1. Most of the schools try to help the community in social functions and community members are also invited to the school on special occasions.

2. In 85 per cent of the schools, political and influential people try to interfere in the internal administration of the school.

I. Buildings and Equipment :

1. Only 14 out of 60 schools have adequate buildings.

2. Only 15 per cent of the schools have sufficient furniture.

3. More than half the schools do not have sufficient number of black boards, maps and mathematical instruments.

4. There is acute shortage of laboratory facilities for teaching of science in all the schools.

5. Only 11 out of 60 schools have separate rooms for library. Only in one fourth of the schools there are sufficient library books.

6. Grants received for equipment are meagre and yet these are not fully utilised.

J. Suggestions for Improvement :

A. *Headmaster.*—1. The headmaster should have long experience of teaching and higher academic and professional qualifications.

2. Special in service training in educational administration and supervision should be provided for permanent headmasters and the same may be made a condition for appointment as headmaster.

3. Pay scales should be attractive and uniform for all the headmasters.

4. Permanent headmasters should be appointed against existing vacancies.

5. Amenities for headmasters serving in rural schools should be provided.

6. Facilities for in-service growth of the headmasters should be extended.

7. Headmasters should be empowered to make temporary appointments against existing posts.

B. *Teachers.*—1. All the existing vancancies should be filled in by trained teachers and new posts be sanctioned where needed.

2. As far as possible middle and high classes should be taught by trained graduates.

3. Re-orientation courses for language teachers, who have not got any pre-service training, should be organised.

4. Residential accommodation for rural teachers be provided. If the Government does not do it itself village Panchayats may be enabled to do it under community development programme.

5. Special encouragement to women teachers, to serve outside their homes, is needed.

6. In-service training facilities should be provided for all teachers.

C. *Supervision and Staff Relations.*—1. Headmasters should delegate some of their responsibilities to the teachers to find more time for supervision.

2. Headmaster should take help of the senior teachers in supervising those subjects which he himself cannot effectively supervise. These teachers should be given less teaching periods.

3. Lessons should be supervised for the whole of the period. Instead of rating the lesson, objective statement of facts should be made and copy of it should be supplied to the teachers so that he may also analyse his lesson.

4. Headmaster should be democratic in deciding school policies and humane in dealing with teachers.

D. *Students and Activities.*—1. Personal contacts of the teachers with the students should be encouraged by increasing the number of teachers in the schools.

2. Maintenance grants to poor students be made available.

3. More hostel facilities should be provided.

4. Methods of teaching should be re-orientated to suit the needs of individual students.

5. Sufficient play grounds should be provided to the schools.

6. Activities should be properly organised and integrated with the courses of study.

7. Every school or a group of schools should have a teacher specially trained and meant for the organization and supervision of co-curricular acitivities.

E. *Examinations.*—1. System of internal assessment as introduced at the Matriculation stage should be extended to all the classes in the school.

2. Objective tests should also be set along with essay type tests.

3. System of cumulative records should be introduced.

4. Rules of promotion should be relaxed in favour of experimentation.

F. *School Office.*—1. Every school should be provided with a clerk.

2. Additional clerks should be provided for every 250 students in the schools where the strength is more than 500.

G. *Inspectorate.*—1. Smaller inspectoral circles should be created in place of present unwieldy divisions.

2. Subject supervisors should be appointed.

3. Inspectors should have long experience of teaching in the schools and should possess special qualifications in supervision.

4. Administrative and supervisory functions should be separated.

H. *Community.*—1. Better relations with community should be established through Parent Teacher Associations.

I. *Buildings and Equipment.*—1. Headmasters should be allowed to raise public money for buildings.

2. Liberal grants for equipment should be given and rules for purchase of material be liberalized.

A Factual Analysis of Science Concepts as Judged by the General Science Text Books for the Primary Classes in the States of Punjab, Himachal Pradesh, Jammu & Kashmir, Delhi and Rajasthan and the Critical Evaluation of the Same in Terms of the Desirable Criteria of the Concepts as Judged by Some Teachers

By N. Vaidya

Introduction :

Science is a factual subject, often including concepts which have to be fully mastered by the child so that the subject matter of the next year is intelligible to the child. Science as a subject at every level is empirically based upon what is learnt in the previous year. In this respect, it is like mathematics. If certain concepts were not fully understood in the earlier year, the development of that concept cannot be fully understood in the following year. Hence, the urgency of the matter demands that the right concepts be given for the right grade, in the right manner possible. This implies that for certain grades, the comprehension level reaches only up to certain concepts.

When concepts are haphazardly introduced without much planning and without understanding the psychology of the child who is to learn them, the concepts either become too easy or too difficult. If too easy, they present a disciplinary problem and waste the teacher's and the students' time. If difficult, it gives the problem of non-comprehension of scientific ideas for all years to come because as explained earlier, scientific knowledge is built up stage by stage. In an overcrowded class-room the above mentioned consequences of improper grade placement of concepts will be defeating the very purpose of teaching the subject of General Science, the purpose for which it has been introduced. The main purpose of this study is to analyse the content of each General Science Text Book in terms of a list of concepts to be prepared by the investigator and then to evaluate them on a sufficiently discriminating scale. On the basis of this information, the second step is to grade these concepts for various classes by taking into account the judgment of some teachers (205) belonging to different States.

The Purpose of the Study :

This study will throw light on the following aspects of the content presented in each book :

(1) Up to what extent is each book only factual ?

(2) Which concepts are included and which are excluded ?

(3) Which concepts are suddenly introduced ?

(4) Which concepts have not been properly dealt with in the text books ?

(5) Which concepts have remained at the same level of development ?

(6) Which concepts ought not to have been present in the text books from the teacher's point of view?

(7) To suggest certain concepts that have not found place in the above mentioned books but which are desirable from the teacher's point of view.

Detailed analysis of this type is likely to discourage stress on memory and recitation because, as far as possible, the child will be then allowed to handle the process rather than the product of the experience by presenting to him a graded series of analysed essential and functional content.

The Present Procedure :

There was practically no literature available on this problem or allied problems that involved science concepts. The present procedure under the following four heads was employed :

(1) What is a concept ? What is a science concept and what are its criteria ?

(2) How are we to analyse the General Science content into its basic concepts and select them ?

(3) Evaluation of each concept.

(4) Teacher's Opinion Table.

What is a Concept ?

It is an idea about the environment. It is more of a psychological nature. It does not develop all of a sudden nor does it develop one by one distinctly. First of all; it is the outline that is formed and which gets enriched, elucidated, rebuilt, reframed and consequently refined with further experience (especially differential) in mind. Two things are very important in the right concept formation :

(1) First-hand experience.

(2) Ability to analyse and synthesize these experiences and then apply them to new experiences.

Science is a tested knowledge. For selecting science concepts, the following four criteria were developed :

1. A concept is not always an isolated fact or even a specific fact.

2. A concept is objective in character, it simplifies, classifies, standardizes and inter-relates the various experiences.

3. A concept explains a certain aspect of the phenomenon, certain mode of reaction or behaviour or it underlies a group of facts.

4. A concept is a scientific fact that does not contradict itself without violating some other equally established law. It is specifically worded to be true within its statement.

No distinction has been made in this study between scientific fact, concept and principle because no such distinction can be made even at the secondary stage.

Selection of Concepts :

Selection of concepts will be governed by the objectives of teaching General Science which depend upon children to be taught. For selecting concepts in this study, the following points have been kept in mind by the investigator—

(1) What important basic facts about a given topic are very important for the child to know ?

(2) How much each of the concept is related to the experiences, past and present, frequency of encounter in daily life and the common environment ?

(3) How much each of the concept is of value in classifying, simplifying, understanding and interpreting the natural events that are occurring around him ?

(4) How much each of the concept is of value in suspending judgment ?

(5) How much each of the concept is of value in maintaining good health, conducive working habits, clean and healthy surroundings, curiosity and interest in the environment.

(6) How much each of the concept can be demonstrated or developed by describing known objects and experiences and phenomenon.

Evaluation of each Concept :

For evaluating concepts, a seven point scale was developed. The scale is as follows :

A

—3	—2	—1	P	+1	+2	+3
Most Indirectly given	More Indirectly given	Indirectly given	Simply mentioned	Good	Better	Best

For example, the characteristics of +3 level are proper derivation, examples, illustrations, certain suggested activity, general application in every day life and the coverage of facts. It is an A_1 concept whose generlisation reached as a result of derivation, elucidation and application to new situations is the best one.

Teacher's opinion table :

205 teachers responded to the questionnaire. The grade placement of concepts is based upon their opinions.

Punjab	54
Delhi	48
Himachal Pradesh	45
Rajasthan	58
	205

There has been no particular scheme of sampling teachers. Even on theoretical grounds, this would not have served the purpose because every teacher is not equally proficient in filling a questionnaire. Teachers were also requested to suggest some more concepts desirable and important from their point of view at the primary stage.

Interpretation of their responses :

A single criterion did not work. So the following multiple criteria were employed for grade placement.

(1) If there were 100 or more than 100 responses for a particular class, then that concept was introduced in that class. This is the 50 per cent criterion.

(2) It was applied when the first criterion failed. It was the 66 per cent criterion for two or three consecutive classes.

Consolidated tables were then prepared.

Results :

The results of this project were then discussed under the following three heads :

1. Preparation of the list of concepts (grade-wise) from the teacher's point of view.

2. Conflict between the teacher's opinions and the text book writers (syllabus compilers).

3. Comparative study of concepts in qualitative and quantitative terms at five different points of the scale.

1. The following are the cumulative records showing the numbers as well as the percentages of concepts (around certain topics) to be introduced in each grade.

Topic	Class I	Class II	Class III	Class IV	Class V
Air	3	5	6	12	22
Water	2	4	11	14	14
Food	2	4	20	54	66
Energy	..	2	25	46	66
Elementary Astronomy . .	..	1	5	14	26
Plant and Animal Life . .	12	23	53	63	60
Miscellaneous	..	..	..	2	9
	19	38	120	205	263

The following table shows the change (percentage) in emphasis on each topic from grade to grade.

Topic	Class I	Class III	Class III	Class IV	Class V
Air. . . .	12	20	24	48	88
Water . . .	10	15.6	57.9	73.7	73.7
Food . . .	2	5	24.7	66.6	71.4
Energy		2.2	28.1	51.6	73.1
Elementary Astronomy ..		3.48	17.2	48.3	89.6
Plant & Animal Life	12	23.8	53.4	62.4	59.4
Miscellaneous		..	..	13.3	60

2. There were 80 concepts that have not been dealt at all in all the books under analysis. Teachers agreed on 21 concepts only. The grade placement for the (80−21) 59 concepts has been shown in the consolidated tables. Teachers regarded 34 concepts as highly unsuitable (on 50 per cent criterion). There was therefore difference of opinion on 13 concepts. The investigator has suggested to retain three among them and delete the rest (10).

3. Comparative study of concepts in quantitative and qualitative terms at five different points of the scale.

The following points on the scale have been chosen as they make interesting observations :

I. The concepts which are totally absent in books for a particular state (III, IV & V).

II. Progressive development from grade to grade.

A concept shows a progressive development from grade to grade when its evaluation lies on three consecutive points on the scale.

III. Factual Level. Here the highest level of development reached is pure informational or simply mentioned.

IV. Sudden introduction of concepts.—These are the concepts which have been introduced at various levels (+1, +2, +3) but only in the fifth grade.

V. Concepts remaining at the same level.—It indicates that the concepts once developed in the third grade remained at the same level of development in the higher grades as well.

VI. Highest Level.—It indicates the +3 value. This is the most functional concept in character.

The following cumulative record shows the various points in the study :

Some Aspects	Symbol	Delhi	Punjab	Rajas-than	Himachal Pradesh	Jammu & Kash-mire
Absent . . .	AAA	61.5%	61.8%	59%	47%	66.5%
Progressive Develop-ment.	(+1,+2,+3 (—P,P,+1) etc.	.7%	.7%	0	1.5%	.8%
Factual Aspect .	—2,—1, PPP etc.	19.2%	18%	14.2%	33%	34.4%
Highest Level . .	+2,+3, 3A,+1,+3 —1,+1,+3	+7.1%	12.2%	2.7%	..	..
Sudden Introduction	AA+1 AA+2	10.7%	21.8%	38.5%	10.9%	9.8%
Concepts remaining at the same level.	+1,+1, +1,+2,+2, +2	8.6%	5.7%	14.2%	9.9%	2.4%

From the above table the findings are :

(1) Books are not highly factual as they are supposed to be.

(2) Books are really inadequate from two aspects namely, the progressive development of concepts from grade to grade and the +3 level.

(3) Sudden introduction of ideas is as large as 38·51 per cent (Rajasthan) and as low as 9·8 per cent (Jammu & Kashmir).

(4) Regarding concepts remaining at the same level, the percentage should not exceed five. Here the percentage is as high as 14·2 (Rajasthan).

The AAA aspect is as large as 66·5 per cent (Jammu & Kashmir) and as low as 47 per cent (Himachal Pradesh).

It will be better to say a word about concepts that came from the teachers. These concepts were around modern topics like Radar, Radio and Sputniks etc. The investigator cannot say whether these concepts can be included in the regular text. Moreover these are the opinions of individual teachers. The investigator therefore suggests that books of scientific interest should be written in order to stimulate interest in science in general and to meet the needs of the gifted ones in particular.

Construction of an Achievement Test to Measure the Knowledge of Class VIII Students of Delhi in the Fundamental Principles of General Science

By O.P. Taneja

The functional understanding of the principles is considered to be an important objective of science teaching in our schools. It has been keenly felt that there has been a neglect of understanding in our current evaluation programme. The measurement programme has direct effects upon teaching practices. So if understandings are the goals which the teachers aim at as a result of their teaching, then the practice of evaluation must include means of measuring such out-comes.

The present study is an attempt to measure understanding of the VIIIth class students of Delhi in the principles of general science and its application in their day to day life.

General design of the test :

It was planned to construct an achievement test suitable for use at the end of the VIIIth class of Delhi Schools. The test was designed to measure the extent to which understandings of the methods and principles of general science was found in the school students of Delhi. The chief aim of the study was to provide the teachers of Delhi schools with a measuring tool for assessing the achievement of their pupils and to afford them an opportunity to have a true picture of their pupils in the understanding of the subject.

Development of the test :

The most important step in the development of the test was the defining of the objectives that the test was designed to measure and the estimation of weight to be attached to various objectives. One useful method of defining the objectives is to state the kind of observable behaviour changes which will result in the student who has achieved the objectives. As a result of discussion with science teachers it was agreed that the test items should be framed on the basis of the following five objectives :—

1. Knowledge of certain scientific facts and principles.
2. Application of scientific principles to new situations in his environment.
3. Classification of a given material on the basis of their common characteristics.
4. Familiarities with simple laboratory procedure.
5. Ability to express simple chemical reactions.

Then the kinds of observable behaviour changes pertaining to each objective were stated. Then an outline of the content was noted, because the content is the actual vehicle through which the objectives are to be achieved. The investigator then prepared a blue print which related the objectives to be achieved with the contents. This was accomplished by attaching percentage weights to the various objectives to be achieved by the test.

The next step in planning the test was to decide the kind of objective test items to be used in the test. Multiple choice items and matching type items were chiefly used in the test as these are the most recommended by the experts in this field.

Construction of the test items :

Keeping in view the general instructions for the construction of multiple choice items and maching items, 85 items were prepared.

The following percentage of items were included to test the various objectives in the test :—

1	Knowledge of facts and principles	31 per cent
2	Application of scientific principles	32 ,,
3	Skill in classification of materials	20 ,,
4	Ability to express chemical reaction	7 ,,
5	Familiarity with laboratory techniques . . .	10 ,,

Preliminary tryout :

The test was administered in the month of March, 1959, to 370 students (305 urban and 65 rural) studying in 10 different schools of Delhi, selected at random. For the purpose of selection of schools Delhi was divided into four zones and two to three schools from each zone were selected. A time limit of 70 minutes was allowed.

The test was scored on the basis of one point for each correct answer, and zero score for errors and omissions. The students were not over-corrected for wrong responses.

Item analysis and selection of items for the final form of the test :

When the scoring had been done, the answer books were arranged in descending order of scores. Then 27 per cent of the total number of answer books *i.e.*, 100 answer books were taken from the top and an equal number from the bottom. This constituted the upper and lower group. Responses made by the upper and

lower group for each item were recorded. I.D. and D.V. for each item were read out from the Davis Item analysis table. Items having D.V. ranging from 20 per cent to 80 per cent and I.D. above ·20 were retained. 15 items were rejected for inclusion in the final form. Then the items in the final form were arranged according to their difficulty value. The test now contained 70 items. A maximum time of one hour was considered to be sufficient for it.

The final form of the test now contained only 70 items. A maximum time of one hour was considered to be sufficient for it.

The distribution of the items in the final form of the test is shown in Table IV.

TABLE IV

Showing number and percentage of items in the final form of the test

Sl. No.	Objective	Exercise	No of items in the original form	No. of items in the final form	Percentage of items in the final form
1.	Knowledge of facts and principles in science.	I,II,VII-A	27	20	28
2.	Application of Scientific principles in new situations	III,VI-B&C	26	22	22
3.	Skill in classification of material	IV	18	15	21
4.	Ability to express chemical reactions.	V	6	6	9
5	Familiarity with laboratory techniques.	VI	8	7	10
	TOTAL			70	100

After the item analysis was over and the least satisfactory items were rejected. The next step was to arrange the items in the final form of the test according to their difficulty value. But this was not possible in this test because each such test was supposed to measure different objective.

So items within each section were arranged according to their difficulty value.

TABLE V

Showing distribution of items according to their discriminative and difficulty values

Discriminative Value	No. of items in the original form	No. of items in the final form
60— 69	0	0
.50—.59	10	10
.40—.49	17	17
.30—.39	26	25
.20—.29	18	18
.10—.19	14	0
10 & below	14	0

Difficulty value

Item difficulty	No. of items in the original form	No of items in the final form
70—79	0	0
60—69	1	0
50—59	11	11
40—49	45	43
30—39	19	16
20—29	12	0
19 and below	7	0

Findings and inferences :

Here an attempt is made to review the findings and draw whatever inferences are permissible with limited scope of this study.

1. The distribution of the scores of the whole group is sufficiently ideal.

2. The distribution is almost normal. In order to test the normality of distribution, the skewness and kurtosis and their reliability were calculated. (i) The skewness was found to be —·04 and S.E.sk=·69. The critical ratio was found to be —·058 (highly insignificant at ·05 level). So the difference of —·04 represents no real deviation of this frequency distribution from normality. (ii) The kurtosis was found to be ·2608. This deviates —·0028 from the kurtosis of the normal curve. The S.E.sk= ·0146 and CR=—·192. This value is far smaller than 1·96, the ·05 significant level, so there is no evidence—so far as the test is concerned—that this distribution is really more peaked than the normal one.

(iii) Mean and S.D. of the whole group, urban schools, and rural schools were separately calculated. The mean score of the students of urban schools and rural schools came out to be 37·67 and 33·85 respectively. The difference between the mean scores of the two groups was tested for significance. S.E.D between the mean score was 1·09 and CR was found out to be 3·505. This difference is significant both at the ·05 and ·01 level. This shows that the students in urban schools have a higher level of achievement than the students in rural schools. No particular reason for this significant difference between the achievement of two groups can be assigned, since the results are based on a small sample of boys tested in the rural schools.

Reliability of the Test :

The coefficient of reliability obtained by the split half method is ·922 ± ·0087, which is fairly high. But we should not obscure the fact that the results have been obtained by the use of Spearman Brown Formula, which gives spuriously high reliability. Secondly, the reliability was not calculated after the administration of the final form, since the final form of the test could not be administered due to shortage of time. The reliability was calculated on the test scores after deducting the scores on the items rejected on the findings of item analysis.

The Validity of Test :

The correlation of the test scores with the average school marks for the three house examinations was worked out. The Pearsonian* 'r' was found to be ·584.

1. The test is sufficiently reliable and valid and can be usefully employed by teachers to ascertain the level of understanding of pupils in the fundamental principles of general science.

2. It can also be used to assess the level of attainment of pupils in the subject.

3. This test can be used by school counsellors and science teachers to allocate students to various science groups in the IX class of higher secondary schools.

Limitations of the present study :

(a) The test could only be administered to boys studying in VIII class of middle, high and higher secondary schools of Delhi. This test could not be administered to girls as there is no provision of general science in girls' schools.

(b) Most of the rural schools in Delhi are basic schools which have a syllabus different from that of urban schools. So only two rural schools were selected where this test could be administered.

(c) The major population of VIII class students in Delhi is taught through the Hindi medium. Keeping this in view the test was constructed in Hindi. So none of the school which teach through the medium of English could be included in the sample.

(d) The sample selected for the administration of the test was of moderate size. The test was administered to 370 students from 10 different schools. Norms calculated from the data are only provisional. More reliable norms can be worked out on the basis of a larger sample.

(e) The test could only be administered in the month of March, since the students in the majority of schools, had not finished their course earlier. The final form was not administered due to paucity of time.

(f) Randomized selection of students from each school could not be made, since the investigator was given an intact class in each school for the administration of the test. Efforts were, however, made to ensure that the class tested was not a selected group.

Standardisation of an Achievement Test in Geometry for Class IX Boys of Delhi Schools

by P. Datta

The Problem :

The present study is an attempt to standardise an achievement test in Geometry. This type of experimental work in the educational field is really worth-while. The investigator after having a careful consideration took up this work. The achievement test in Geometry has been constructed by Laksh Kumar, an ex-student of the M. Ed. class, Central Institute of Education. The present investigator used that test for standardisation as a follow-up study. The previous investigator, in the construction of the test used 133 items under six heads *viz.*, multiple choice items, sentence completion, simple recall, matching, figure study and miscellaneous. For a try-out, he administered his test in Punjab to 200 students of class IX. He then determined the difficulty value and discriminatory co-efficient of each item. For his final choice he selected the items which had the difficulty values from 20 per cent to 80 per cent with high discriminatory coefficients. In the final form the number of items being selected was 64. The number of items in each head both in the original and the final form are given below :

	Original form	Final form
1. Multiple choice	20	10
2. Sentence completion	25	12
3. Simple recall	21	12
4. Matching	33	6
5. Miscellaneous (figure study, figure drawing, areas, construction etc.)	34	24
TOTAL .	133	64

The 64 items were classified in nine forms A, B, C, D, E, E_1, E_2, F, and G in the following manner:

Forms	Number of items	Forms	Number of items	Forms	Number of items
A	10	D	6	E_2	4
B	12	E	4	F	8
C	12	E_1	5	G	3

The present investigator used these 64 items for his purpose, that is, for standardisation.

In standardising the test the investigator administered the test to boys of class IX in Delhi Schools. So, the present study has been titled as "Standardisation of an Achievement Test in Geometry for class IX Boys of Delhi Schools".

The present investigator selected eleven schools from the list of the boys' schools in Delhi. He included both High and Higher Secondary Schools. From these schools he took a sample of 500 boys coming from all communities *viz*, Bengali, Madrasi, Punjabi etc. The boys were from both arts and science groups of the secondary courses in Delhi. The investigator himself was not satisfied with this sample for standardisation but time and other factors did not permit him to administer the test to a large number of pupils. The ages of the boys under investigation varied from 13 to 15 years.

The table "A" shows the names of the schools and the number of boys taken from each school :

TABLE "A"

Sl. No.	Name of the Schools	Groups	No. of boys	P.C. on the total No. of boys
1	Raisana Bengali Boys School	Science	25	5.00
2	Union Academy	Science	50	10.00
3	United Christian School	Arts	30	6.00
4	Madrasi Higher Secondary School	Science	35	7.00
5	Govt. Model School	Science	35	7.00
6	Harcourt Butler H.S. School	Science & Arts	50	10.00
7	Birla H.S. School	Arts	75	15.00
8	Govt. Boys High School	H. School	75	15.00
9	M.B.H.S. School	Science & Arts	50	10.00
10	Ramjas H. S. School	Science	45	9.00
11	D. A. V. School	Arts	30	6.00
	TOTAL		500	

The table "B" shows the number of boys in each group *viz.*, Science, Arts, Science and Arts combined and High School course :

TABLE "B"

Sl. No.	Group on Courses	No. of boys	P.C. on the total number of boys
1	Arts	135	27.00
2	Science	190	38.00
3	High School.	75	15.00
4	Arts & Science	100	20.00
	TOTAL	500	

In scoring the investigator assigned one mark for each suitable answer. The total score of a student would mean the total number of correct responses in the test.

The Procedure :

The steps of standardisation adopted here are :

(1) Standardisation of the Material,

(2) Standardisation of the Method.

(3) Standardisation of the Results.

The first two steps were done by item analysis after administering the test to the students. On item-analysis it was found that 55 items are of difficulty value between 20 per cent and 80 per cent. If we consider that the suitable items with the above range of difficulties should have discriminatory value from ·20 to ·55 then we get 28 items as the suitable ones.

There are three methods of standardisation of results :

(1) Mean of Standard Deviation Method.

(2) Percentile Method.

(3) Age-basis Method.

The last one was not considered because in the present study the norm is not based on age but on grade.

For the first two methods the statistical calculation was done and the following results were obtained:

The Findings :

As it is a follow-up study, the answer key was prepared by the previous investigator. The present investigator modified the key because it was found that certain items have more than one answer. All the possible answers of these items have been put in the present key.

TABLE H

Measures of Central Tendency and Dispersion and their Reliability

Sl. No.	Name of Measures	Amount	S.E. of the measure	Limits of the True Measure	
				At .01 of level of confidence	At .05 of level of confidence
1	Mean (M) .	36.74	.61	35.17 to 38.31	35.54 to 37.94
2	Median (Mdn).	38.39	.79	36.43 to 40.35	36.90 to 39.88
3	Model (Mo) .	41.27	..	..	..
4	Standard Deviation (S.D.)	13.56	.43	12.44 to 14.68	12.72 to 14.4
5	Quartile Deviation (Q) .	10.96	.48	9.72 to 12.2	10.02 to 11.90
6	Kurtosis (Ku) .	.297	.013	..	..
7	Skewness (SK)	—2.64	.858	..	..

Percentile norms were thus calculated and are shown below. They are applicable to class IX of boys' schools in Delhi where the average age is 14 years.

TABLE M

Class interval	'f'	cum 'f'	Percentiles
60—64	9	500	P100=64.50
55—59	38	491	P90=54.24
50—54	57	453	P80=49.85
45—49	65	396	P70=49.96
40—44	69	331	P60=42.25
35—39	54	262	P50=38.39

Class interval	'f'	cum 'f'	Percentile
30—34	46	208	P40=33.63
25—29	52	162	P30=28.35
20—24	38	110	P20=23.17
15—19	49	72	P10=17.26
10—14	16	23	P0=0.000
5—9	6	7	..
0—4	1	1	..

As the present investigation is based on the previous investigation the investigator wants to point out some defects in the construction of this achievement test.

The previous investigator did not present a blue-print of the test. However, the items which were chosen were meant for providing concept of figures and forms, capacity for reasoning, power of discrimination, and finding out inter-relationships between different statements and figures. The items were not of wide variety.

Comparison between the present and past investigations

Sl. No.	Measures	Present investigation	Past investigation
1	Mean	36.74	26.12
2	Median	38.39	26.50
3	Mode	41.27	27.26
4	S.D.	13.56	11.31
5	Q.D.	10.96	7.49
6	Kurtosis	.297	.246
7	Skewness	—2.64	—.55

Performances of different schools were compared by finding out the respective means, standard deviation, coefficient of variability and percentage of mean score.

It was found that four schools were below average. Three schools have shown nearly the same performance. The High school students were near the average.

According to the different course of the secondary curriculum the schools were divided into four groups; *viz.*, Science, Arts, High School and Arts and Science (combined). The test of significance for the mean-difference of the different groups with the whole tests was done. It was found that Science and Arts groups differed significantly at 5 per cent and 1 per cent level. The High School group did not differ significantly, but combined group differed significantly at 5 per cent level but not at 1 per cent level.

The causes of these differences are as follows:

(1) All Science students are having advanced course and in the allocation brighter students come to the science course. So, they are much ahead and therefore they scored above average.

(2) The Arts students are not bright, they have elementary mathematics and also they have a negligent attitude towards mathematics. So they scored below the average.

(3) The high School students are average, because they are to keep themselves alert for the course to be taken after Class X.

By comparing the examination marks of mathematics of 175 boys with their scores, the validity was found by correlating these two variables. It was found to be .43 and applying t-test it was found to be 6.94 which is significant at both 5 per cent and 1 per cent.

By applying split-half method that is by finding out the correlation between the odd and even items correctly answered and then applying Spearman Brown formula the reliability was found out to be .94 which was quite high.

The method of analysis of variance was applied to see the disparity between the schools. Using F-test it was found F to be 51.42 which is significant at 1 per cent and 5 per cent level.

Conclusion :

This test can be used in Delhi subject to some correction which has been mentioned in the report. Some items should be changed. Answer key must be modified and new items of the same weightage may be used. Use of such a test will give the teacher an understanding of better judgment.

A Factual Analysis of Science Concepts as Judged by General Science Text Books for Classes VI, VII and VIII in the States of Delhi, Punjab, Rajasthan and Madhya-Pradesh and a Critical Evaluation of the Same in Terms of the Desirable Criteria of Concepts for the Same Classes as Judged by Some Teachers

By P. C. Bansal

The books for middle standard are written by college lecturers or high school teachers who do not frequently come in contact with elementary school children and therefore they have to guess the concepts to be taught in the various classes. The purpose of the present investigation is to find the grade placement of science concepts for sixth, seventh and eighth classes of Delhi, Punjab, Rajasthan and Madhya Pradesh.

Procedure:

The books of the four States for these classes were read thoroughly. To fill the gaps other books on general science were read. A list of 487 concepts was prepared. The concepts in the form of a questionnaire were sent to some teachers of the four States. For the purpose of the analysis of the data the responses of 118 teachers were considered.

Evaluation of the Text Books:

The General Science Text Books of the four States for classes VI, VII and VIII were evaluated on a seven point scale regarding the presentation of the concepts in the text books. The scale is as follows:—

−3 −2 −1 p +1 +2 +3

P indicates that the concept as worded by the investigator is present in the book. It merely occurs in the book without being explained.

+1 A concept is marked +1 when it is derived or based upon some example within the experience of the child.

+2 A concept is marked +2 when it is properly derived and is illustrated with the help of examples and diagrams.

+3 A concept is marked +3 when it is properly derived. Some experiments are given. Application of the concept in every day life is described. The concept is illustrated with diagrams. A concept at +3 level is considered to be the best because derivation, generalisation and elucidation are the best.

—1 A concept is placed at —1 when generalisation is not properly done and much is left to the imagination of the child.

—2 A concept is placed at —2 level when connection between the concept as worded by the investigator and as given in the book is remote and much is left to the imagination of the child.

—3 A concept is placed at —3 level when connection between the concept as worded by the investigator and as given in the book is the remotest.

A concept placed at —3 level is considered to be the worst because derivation, elucidation and generalisation are not properly done.

A—A concept is marked absent when the concept as worded by the investigator is not present in the book. The books were evaluated for 517 concepts. 487 concepts were included in the questionnaire and 30 concepts were either found in the book or were suggested by the teachers.

Analysis and treatment of data:

For the grade placement of concepts two criteria were used. If out of 118 persons, 59 or more gave their opinions that a particular concept should be introduced in a certain class that concept was considered suitable for that class. On the basis of 50 per cent criterion 172 concepts were placed in various grades. In order to cover the grade placement of other concepts the 50 per cent criterion was lowered down to 40 per cent. In that case the number of responses for a particular concept in a class was 47 or more. In this manner the grade placement of 136 concepts was done. Taking 50 per cent and combined 50 per cent and 40 per cent criteria the number of concepts in three classes are:—

Class	50% Criterion	50% and 40% criteria
Class VI	37	59
Class VII	2	33
Class VIII	98	174
Not wanted	35	42
TOTAL	172	308

It is observed that most of the concepts are included in eighth class and a lesser number of concepts are included in sixth class and a far lesser concepts in seventh class. The teachers showed

the tendency to mark the concepts in sixth and eighth classes and thereby neglected seventh class. Grade placement for 179 concepts was not decided because the frequency of responses for a concept in two classes was the same or nearly the same. In some cases the frequency of responses for a given concept in three classes was the same or nearly the same.

After evaluating the books on a seven point scale, the concepts falling in each category in the seven point scale in each of the three classes were calculated separately. These three tables for sixth, seventh and eighth classes were further added up as a cumulative records for all the four States. The table of final results is as under:—

Level	Delhi	Punjab	Rajasthan	Madhya Pradesh
3	5	9	1	10
2	90	81	40	71
1	154	89	90	80
P	87	45	81	41
—1	7	..	7	3
—2	..	..	2	1
—3	..	..	..	..
TOTAL .	343	224	221	226

From the above table it is clear that there are no scores at all in the —3 level. There are a few and very few scores at —1 and —2 level. These minus scores have to be entirely weeded out from the existing text books because these are undesirable.

On the positive side the greatest cluster of scores are 1 level. While it is desirable, yet it falls short of the ideal which is possible at 3 level. An extremely small number of concepts fall within the category of 3 level which is most desirable.

To conclude the minus scores will have to be entirely weeded out and scores should be taken to +3 stage to produce maximum benefit to students.

An Investigation into the Study Habits of IX & X Class students of district Sangrur in Punjab with special reference to English and Mathematics

By R. K. Garg

Purpose of the Study:

In view of the importance of the need of effective study habits particularly to English and Mathematics, the present investigation was mainly an attempt—

(i) to enlist the prevalent study habits among students of IX and X class in respect of English and Mathematics and the common factors that hinder learning in these two subjects;

(ii) to examine as to what extent the study habits of good and poor students in respect of their achievement in both English and Mathematics differ; and

(iii) to find the correlations between the school achievement of the boys in the two subjects under consideration separately with scores on the questionnaire administered by the investigator.

Scope of the Study:

The investigation is confined to the high schools of Sangrur district in the Panjab.

TABLE I

Showing the number of boys taken from each school

Sl. No.	Names of the school	No. of boys taken from IX class	No. of boys taken from X class	Total
1	Govt. High School, Malerkotla .	30	30	60
2	Arya High School, Dhuri . .	30	30	60
3	Raj High School, Sangrur . .	30	30	60
4	Govt. High School, Narwana . .	35	35	70
5	Govt. High School, Kalyat . .	20	20	40
6	Govt. High School, Balu . .	20	20	40
	TOTAL .	165	165	330

7—1 C. I. E. Delhi/61

Present Procedure:

It was decided to use the questionnaire to collect the data:

For the sake of convenience the items were divided into three broad heads : (1) General Section, which included items concerning study habits both in English and Mathematics (1-50), (2) English section (51-70) and (3) Mathematics section (71-90).

The general head was further divided into seven sub-divisions (A.G).

A. Planning and practising the study schedule (1-10)

B. Interest, motivation and concentration (11-16)

C. Intelligent reading (17-22)

D. Review of the previous work done (23-27)

E. Preparation of the home work (28-34)

F. Examinations (35-42)

G. General, physical and home conditions (43-50)

Above, the numbers in brackets refer to items.

Every precaution was taken to attach each item under the general head to its appropriate sub-divisions. Some overlapping may seem here which could not be eliminated. The items under the English and Mathematics sections were kept in tact and no endeavour was made to deal with them under further sub-heads:

The questionnaire was framed to explore the above aspects of study habits specific to English and Mathematics, and questions were written in view of the following pre-requisites:

Findings:

The following conclusions were drawn after analysing the data collected through the questionnaire.

General Section on Study Habits :

1. Students are not much aware as to how to budget their study time. 43.6 per cent students keep the study schedule and 48.3 per cent are there who sometimes prepare it. Only 12.4 per cent were found who discuss the study schedule with their parents to avoid unnecessary interruptions. The habit of studying in short stretches and periods of a few minutes in between was found among few. There was a general tendency to devote much time by the boys to their subjects of interest, thus paying little attention to subjects requiring more energy and concentration.

2. Students lack courage to get their doubts cleared by asking questions to the teachers in the class. It is found that only 38·5 per cent make an attempt to bring the wandering mind to study and others suffer from the habit of day dreaming.

3. The habit of intelligent reading is seen lacking among the large section of the students. Lip movement and vocalization while making silent reading is practised, as a result low speed of reading. Students seldom survey the chapter and ask question in anticipation of reading a chapter.

4. The previous work done is not reviewed by 38·8 per cent before embarking on new assignments and 32·8 per cent even do not care to revise the work just after finishing it.

5. Students realize the excessiveness of work assigned by the teachers. This is a symptom of no coordination among the teachers as to the amount of home work to be given to the students daily. A majority of 70·9 per cent is found to forget to do the home work always or sometimes. This neglect indicates that the students do not maintain a separate note book to note the daily home work assigned by the teacher ; or that the home work is not challenging enough to the student to motivate him in doing it.

6. Students generally do a heavy revision the night before the examination under great pressure and mental tension. Postponing the revision to the last moment is not at all healthy. Rote memory is rampant. The habit of preparing for the examination from cheap notes or helpbooks is very much prevalent among students.

7. Students are not particular about their place of study.

8. It has been found that only 48·6 per cent definitely do not like to study lying down in bed.

English Section :

1. A good number of students (71·5%) do not make proper use of the dictionary. Love for English literature is envinced by a very low percentage. The habits of acquiring vocabulary are distressing. Diary or note-book is not maintained by more than 28·6 per cent in order to enlist new words, phrases, idioms, etc.

2. There is a great tendency prevalent among students to think first in Hindi or Panjabi and then to translate in English while attempting a piece of composition. A good standard of English composition cannot be expected. Students are not in the habit of comparing one's own composition with other class fellows.

3. With poor vocabulary and thus inadequate reading, satisfactory standards cannot be expected in English comprehension and expression. English is not used in conversation at home. It is also noted that 34·3 per cent study English only because it is a compulsory subject and otherwise they would fail in the examination.

Mathematics Section :

1. Except for 34·0 per cent, the rest of the students commit mistakes in the computation of four fundamentals.

2. Difficulty is being experienced by the majority in understanding mathematical terms and their concepts. Students have the tendency to look for the answers first from the book. Difficult problems are left by the students. They do not grapple these problems patiently.

3. The habit of writing theorems by using in the figure letters different from the books was found in 35·5 per cent. Students shirk to attempt riders concerning the propositions.

Difference between the study habits of upper group and lower group :

1. When the upper group and the lower group were compared on the basis of the whole questionnaire, the two groups showed definite differences in their study habits. The upper group exhibits better study habits as compared to the lower group. [The 't' value (2·26) was significant at the 5 per cent level].

2. The English section of the questionnaire did not show any significant differences in the study habits of the two groups. There was some difference but that can only be attributed to sampling fluctuations. This is due to the fact that only seven items were taken for scoring from this section.

The two groups were also compared on the basis of Mathematics section on study habits of the questionnaire.

3. The value of 't' was found to be 3·16 which is significant at 5 per cent and 1 per cent. This result shows that the items included in the Mathematics section clearly differentiate between the study habits of the two groups. The upper group possesses better habits.

Correlation :

The study demonstrated a poor relationship (+·193) between the school achievement of the boys in English and scores on the questionnaire. The correlation between the marks obained by the boys in Mathematics and scores on the study habits

questionnaire was also low (+·100). The main reasons for this are considered to be taking on the part of the students, different standards of marking in schools, non-availability of standardised achievement tests etc.

It was also noted that the bright students filled in the questionnaire cautiously.

Different Methods of Marking English Composition

By R. K. Rongong

Introduction :

The marking of composition or in other words the correction of composition is very important, if it is used in the right way, for it can help the pupils to learn a language. The correction of language should be a means of inculcating in the pupils a habit of noticing the mistakes in their own writing and speaking and also of making them feel responsible for them. It will be of little use if the pupils are satisfied with the mere knowledge of the number of mistakes they have committed. They should in the first place be made cognizant of the mistakes but over and above that they should be guided to correct those mistakes themselves. Correcting ones own mistakes forces the pupil to notice the correct forms and also make him feel responsible for learning the right forms. Correction when properly understood both by the teacher and the pupil should lead to self criticism of the highest order. This is the surest way of improving the writing abilities of the pupils, be it in the mother tongue or in a foreign language.

The Prodlem :

Marking English composition objectively is not as easy as it sounds. Almost all who have faced the problem of marking English composition have come to the conclusion 'that marking composition is by no means an easy task'. Its problem is mainly reflected on the unreliability of marking and by unreliability is meant the inconsistency of the markers and not the test.

There are a number of ways of marking English composition which will be discussed briefly in the following pages. Out of them the investigator has selected two types of marking—(a) marking by general impression and (b) the analytic method of marking. The investigator has sought to compare and find out which one of them is more reliable. He has done this by asking a number of markers to go through the same essay scripts twice using the two different methods of marking and comparing the results. The attempt is "An Investigation into the Reliability of Marking English by General Impression and Analytical Method".

Due to the time factor, the number of markers also had to be limited to six. Further going through a number of essays twice within a fairly short period of six weeks is also too much to expect from the markers, all of whom are teachers already pressed with their usual daily routine which is pretty heavy. The number of

the essay scripts for this reason, had to be limited to fifty. Apparently, the sample had to be taken from only one school. The Delhi Public School was selected for this purpose because the standard of English in this school is reputed to be higher than that of the average school in Delhi, since pupils start the study of English earlier than class VI. It was expected therefore that the essays would be of a reasonably good standard, making correction more interesting to the markers.

The investigator, therefore, has had to face these limitations :

(i) in keeping the number of scripts down to 50. The results would certainly have been better with larger sample.

(ii) in restricting the sample to one school.

(iii) in being limited to one set of six markers. Two of more teams would also have yielded more accurate results.

(iv) in not having more time at his disposal as that the essays could be marked at different points of time.

Procedure of the Study:

The topic that seemed most suitable and was finally selected was—"An Exhibition I have Visited". A descriptive essay is always easier for students learning to write free composition in a foreign language. Imaginative or argumentative subjects were deliberately omitted in order not to tax the students with difficult subject matter. It was necessary that they should be able to write freely and easily.

Time allowed—one hour.

Markers were selected on the basis of their qualifications and teaching experience which are as follows :

Markers	Qualifications	Experience in Years
A	M.A., B.T.	8
B	M.A., B.T.	11
C	M.A., L.T.	3
D	M.A., B.T.	12
E	M.A., B.Ed.	13
F	M.A.	11

All essay scripts were given serial number beginning from 1 to 50 instead of names.

The original mistakes and spellings were retained. The scripts were, then, given to the markers with the instruction that they were to mark the papers on their own impression. No special methods were advised or any kind of instruction given. They were asked to mark the papers out of a total of 100 marks. Care was taken not to mention any thing to them at that stage about the second marking—the marking by the analytic method.

The markers took about four weeks to do the correction according to this method. The marks were given by them on the attached flap, no marking being done on the scripts themselves.

Later a conference was fixed for a discussion with all the markers. As all the markers were not able to be present, another meeting was scheduled after a week. At that meeting the main purpose of the investigation was disclosed namely that it was being undertaken to compare two different methods of marking. The purpose of the conference was to seek the cooperation of the markers to review the scripts a second time using the analytic method this time and to arrive at some common measure of understanding about the components to be discriminated in the composition itself.

The investigator had with him the method followed by Hartog which served as the starting point of the discussion. Finally it was agreed that the same ramification, followed by Hartog could be applied here also with some modification in the allotment of marks. This was followed by discussion on what exactly constituted the different aspects like quality, quantity, control of ideas, vocabulary, structure and the like. The final form came out to be as follows :—

(i) Quantity (25), Quality (15), Control of Ideas (10)	50
(ii) Vocabulary	15
(iii) Grammar and Punctuation	15
(iv) Structure of Sentence	10
(v) Spelling	5
(vi) Handwriting	5
TOTAL	100

The general consensus of opinion in the discussion on each aspect mentioned above has been summarized in the following lines :

The quantity, quality and control of ideas in any essay are important aspects hence they have been given a greater weightage. When dealing with these one has to look for the number of points, relevency among the points, the writer's sensitiveness to ideas, his individual point of view and systematic arrangement.

The next aspect, vocabulary, is constituted of the number of words, appropriateness of words and judicious selection. Grammar and punctuation include correctness of sentences, agreement of different parts of speech and the like. Structures of sentences (iv) differs from the previous aspect (iii) in this that the former is more concerned with variety of structure, flexibility in style and effectiveness of expression.

The main thing to be looked for in handwriting is legibility.

After the conference the essay scripts with new flaps attached, were distributed to the markers for the second time. Two weeks' time was given to them to go through the papers. For judging handwriting the original scripts were given to all the markers. Thus a second set of marks was collected.

The Results :

Mean values of the marks given by each of the judges in the two methods are given in Table I.

TABLE I

Judges	A	B	C	D	E	F	Total
Impression Method . .	38.60	50.54	52.80	35.50	48.24	38.80	264.48
Analytic Method . .	42.02	46.88	53.96	34.46	46.08	48.70	272.10

The two results do not show any marked difference. The total of the two means show that the analytic method gives a greater total. A cursory view of the table indicates that there is a slight tendency towards closer results in the analytic method. In other words, the different markers seem to be a little more consistent in the analytic method.

Table II gives the correlation between judges in the impression method and table III presents their correlation in the analytic method.

TABLE II

Impression Method

Judges	A	B	C	D	E	F
A	.21	.26	.34	.33	.103	
B	..	.46	.56	.45	.49	
C	..	..	.67	.35	.44	
D	..	..	..	.67	.60	
E	..	..	..	..	.52	
F	..	..	..	..	..	

TABLE III

Analytic Method

Judges	A	B	C	D	E	F
A	..	·53	·29	·47	·54	·44
B	..	..	·32	·71	·48	·40
C	..	..	..	·32	·25	·25
D	..	..	..	..	·62	·55
E	..	..	..	..	..	·59
F	..	..	..	..	..	..

The two tables do not show significant difference which means that the two methods yield almost the same result. A close analysis of the two tables however show that the markers A, B, E, and F have contributed to larger correlation in the analytic method. In other words these four judges have tended to be consistent in the analytic method more than in the impression method. Markers C & D have not increased the value. It means that the two methods of marking do not differ much although a little can be said in favour of the analytic method. More investigation is necessary in order to make the conclusion more emphatic.

Table IV gives the analysis of variance which shows if there is any difference between the markers or the methods :

TABLE IV

Sources of variance	Sum of Square	df	Estimation of variance	Variable Ratio	Significance
Between Rows .	424.2515	5	84.8503	7.02(5,5)	Significant at 5% and not at 1%
Between Columns .	4.8387	1	4.83387	·4(1,5)	Not significant
Errors . . .	60.4753	5	12.0951	..	..
TOTAL .	489.5655	..	..	..	..

The discrepancies in marking between the markers is significant at 5 per cent level and is not significant at 1 per cent level. There is virtually no significant difference between the two methods

as visualized from the table. The inconsistency among the scores is, as the table shows, entirely due the difference in markers. The markers differ in both the methods. It follows from it that no one method can be stressed to be superior to the other.

From the study these conclusions were made :—

(i) that there is no significant difference between the two methods of marking.

(ii) that the variance was due to the difference in judges rather than the methods.

(iii) that in the analytical method the markings of a majority of the judges are better correlated.

These results make it necessary to undertake more investigations on this line.

The investigator feels that a number of factors have influenced the marking and coloured the result thereby. These may well be mentioned here, which, as the investigator hopes, will help other future investigators. They are :—

(*i*) *The experience of the markers.*—All the markers are Senior English teachers with a good amount of experienced behind them. They have been doing such marking for a number of years in course of which they have developed a certain method of marking. Hence different methods as such will affect their marking very little. During the course of the meeting the investigator was told by some of the markers that even while marking the papers the first time they had followed an analytical process, though in crude and written form. It may be added here that no mention of the analytic method was made when the essays were given for the first time.

(*ii*) *Time lapse.*—The investigator feels that six weeks time is too short a period as factors such as practice and memory might influence the markers. There is every possibility of a carryover of the impression method to the analytic method in such a short length of time.

(*iii*) *Sample.*—The number of samples had to be reduced owing to practical difficulties. A greater number of scripts would certainly have given a more definite result.

(*iv*) The investigator is aware that the markers did their utmost to help the investigator by going through the papers twice. They have devoted a great amount of their time and energy. The investigator somehow or other feels that the markers could have done more justice if they were free from other pressure and had more time been allowed to them for marking the papers specially in the analytic method.

Investigation into Attitude towards Crafts of Boys in Senior Basic Schools of Delhi

By S. L. Gajwani

Introduction :

In the system of basic education in which craft occupies an important place, the question of attitude of children towards this activity is very important, because, in case the children have negative attitude towards craft work, it is very likely that they would develop negative attitude towards the subjects correlated with that activity, and in this way the whole educative process is in danger of becoming a negative process. But very often the views expressed by people in this regard are based on subjective experiences. There has been very little systematic research done on this problem. The present study was undertaken to investigate into attitude of boys in senior basic schools of Delhi, towards (i) spinning, (ii) weaving, (iii) agriculture, and (iv) wood-work.

The Present Procedure :

An attitude scale of Thurstone type was constructed. This involved the following steps :—

(i) 30 boys in two senior basic schools were asked to writh a brief account of their attitude towards crafts. A few teachers and headmasters in basic schools were interviewed and they were requested to state the manner in which the students usually manifested their attitude towards crafts. On the basis of this, 74 statements indicating some kind of opinion regarding the value of craft were selected. These statements were given to a panel of 40 judges for rating on an eleven point scale representing equal-appearing intervals from the highest appreciation of craft to strongest depreciation of craft, with neutral point at the middle.

(ii) For each statement the median point and interquartile range were calculated from the distribution of judgments for each statement. The median point represented the scale value of a statement and the inter-quartile range or Q-value was the estimate of ambiguity of that statement. On the basis of the scale-values the statements were placed in the respective class-intervals representing eleven units of the scale. From the statements in each class-interval, three statements with least Q-value in each class-interval were selected. The thirty-three statements thus obtained constituted the experimental attitude scale. From this scale, four scales were prepared by substituting in each statement the name of the craft for the word 'craft' appearing in each statement.

The Scope of the Study :

Four samples of 200 boys each were selected for the four crafts. Each sample included 60 boys of Class VI and 70 boys each of Classes VII and VIII. The boys in each sample were selected from at least 5 basic schools. In all, 11 schools were included in the study. From each school two different samples of 40 boys each, were selected for 2 crafts taught in each school. Each sample of 40 boys included about 12 boys from Class VI and 14 boys each from Classes VII and VIII.

Mean values of statements endorsed by each student constituted the score of each student.

The Findings :

(i) Average age of students of each class was as follows :—

Class VI	12.26 years.
Class VII	13.18 years.
Class VIII	14.17 years.

(ii) The experience of craft work by boys in each sample was as follows :—

Spinning group	4.87 years.
Weaving group	2.03 years.
Agriculture group	3.89 years.
Woodwork group	0.91 years.

The experience of boys in woodwork group was the least because it was introduced in Class VI, whereas the other crafts were introduced at various stages in junior basic schools.

(iii) The means of the scores of 200 boys in each sample have been obtained as follows :—

Spinning	Mean (M_1)=4.16; sd_1=1.66
Weaving	Mean (M_2)=4.02; sd_2=1.39
Agriculture	Mean (M_3)=3.90; sd_3=1.52
Woodwork	Mean (M_4)=3.73; sd_4=1.31
All groups together	Mean (M_t)=3.95; sd_5=1.50

It is thus established that the boys in senior basic classes in Delhi like the crafts and the various crafts in order of liking are woodwork, agriculture, weaving and spinning.

(iv) The difference between the means for woodwork and spinning is significant at .01 level, and between woodwork and weaving is significant at .03 level. The difference between the means for agriculture and spinning is significant at .10 level. Although this difference is not very significant, yet it indicates a very strong trend of greater liking for agriculture as compared

to spinning. The differences between means for woodwork and agriculture, agriculture and weaving, weaving and spinning are not significant.

(v) On an average each student endorsed 14.4 statements.

Out of the total of 11,536 statements endorsed by the 800 boys, 9,113 were positive; 705, neutral; and 1,718, negative statements.

(vi) The attitude scale is divisible into 3 parts, *viz.*, statements 1 to 11, 12 to 22, 23 to 33, each part containing one statement from each of the 11 class intervals. If the score by a boy on the scale as a whole is denoted by figure 1, and those on parts I, II and III by 2, 3 and 4 respectively, the following coefficients of correlations were obtained :

r_{12} . . . . . = .93

r_{13} . . . . . = .92

r_{14} . . . . . = .98

This indicates very high internal consistency in the scale.

(vii) All the trained graduate teachers in senior basic boys schools of Delhi were separately requested to state what in their opinion was the attitude of boys in their respective schools towards the crafts taught in each school. According to this opinion poll of teachers, the students like all the four crafts and the various crafts in order of liking are woodwork, agricultue, weaving and spinning. This tallies exactly with the results obtained by the attitude scale.

Limitations of the study:

The samples included boys from rural areas and backward families. It does not include the children from the elite group and middle class who constitute a big and important part of Delhi population. It would be incorrect to infer on the basis of the data collected in this study that boys of age group 11-14 in Delhi would like craft work.

The Scale is given below :

इन्हें भरो :—

(१) नाम..... (२) पिता का नाम.....

(३) पिता का काम.....

(४) स्कूल.....

(५) कक्षा..... (६) आज की तारीख.....

आयु.....

कताई में व्यतीत समय.....वर्ष

नीचे लिखी बातें ध्यान से पढ़ो :—

१. तुम अपने स्कुल में जो उद्योग करते हो उसके विषय में तुम्हारी रुचि जानने का यह एक प्रयत्न है। यह कोई परीक्षा नही है। यह परचे तुम्हारे अध्यापकों को नहीं दिखाये जायेंगे। अतः तुम पूर्ण स्वतन्त्रता से अपने विचार प्रकट करो।

२. तुम कुछ समय से कताई कर रहे हो। तुममें से कुछ को इसमें रुचि होगी। अन्य को यह अच्छी नहीं लगती होगी। शेष को यह उद्योग न तो पसन्द है, और न ही नापसन्द है। तुम अपने विचारों का स्वतन्त्र रूप से संक्षिप्त में नीचे वर्णन करो।

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अपनी रुचि के अनुसार जो तुम्हें ठीक लगता है, उसके नीचे × चिन्ह लगाओ

मुझे कताई बहुत पसन्द है। मुझे कताई न अच्छी लगती है और न ही बुरी। मुझे कताई बिल्कुल अच्छी नहीं लगती

पीछे ३३ वाक्य लिखे हैं। जिन वाक्यों से तुम सहमत हो उनके आगे √ चिन्ह लगाओ। प्रत्येक वाक्य को ध्यान से पढ़ो और शुरु करो। जिनसे तुम सहमत नहीं हो उनके आगे कुछ न लिखो।

१. पाठशाला में मेरे लिए कताई सबसे अधिक मनोरंजक विषय है।

२. आरम्भ में तो कताई में मेरी रुचि थी किन्तु अब नहीं है।

३. राष्ट्र की उन्नति तथा विकास के लिए पाठशालाओं में कताई सिखाया जाना आवश्यक है।

४. मुझे कताई से अत्यन्त घृणा है।

५. जब मेरा दिल पढ़ाई से ऊब जाता है, तो मैं यह चाहता हूं कि जाकर कताई करूं।

६. चूंकि गांव के बड़े लोग कताई के विरुद्ध हैं, इस लिए मैं इसको पसन्द नहीं करता हूं।

७. मैं कताई को इस लिए भी पसन्द करता हूं क्योंकि कुछ समय के लिए पढ़ाई से छुटकारा मिलता है।

८. मुझे कताई में न रुचि है और न अरुचि।

९. कताई करते समय मुझे आलस्य आता है।

१०. मेरे विचार में कताई सीखना मेरे लिए लाभदायक है।

११. मैं अपने छोटे भाई या बहिन को कताई सीखने की सलाह नहीं दूंगा।

१२. मुझे कताई अच्छी नहीं लगती, क्योंकि मेरे दोस्तों की इस में कोई रुचि नहीं है।

१३. मेरा सुझाव है भारत के किसी भी स्कुल में कताई नहीं सिखानी चाहिए।

१४. मेरी कताई में इस लिए भी रुचि है क्योंकि मेरे माता पिता तथा अन्य सम्बन्धी कहते हैं कि मुझे कताई सीखनी चाहिए।

१५. छुट्टी के दिन भी मैं स्कुल आकर कताई करना पसन्द करूंगा।

१६. कताई के निश्चित घन्टे के अतिरिक्त भी मैं पाठशाला में कताई करना पसन्द करता हूं।

१७. अच्छे साधन प्राप्त होने पर मैं कताई सीखना पसन्द करूंगा।

१८. कताई करते समय मेरा दिल जल्दी ऊब जाता है।

१९. कताई में मेरी रुचि है।

२०. मेरे विचार में कताई में हमारा समय नष्ट ही होता है।

२१. मैं कताई पसन्द नहीं करता, क्योंकि मुझ से अच्छा सूत नहीं बन पाता।

२२. पाठशाला में कताई सिखानी चाहिये या नहीं, इस पर मैं निर्णय नहीं दे सकता।

२३. स्कुल में कताई का सिखाना निश्चय ही हानिकारक है।

२४. मुझे कताई करने में आनन्द आता है।

२५. अच्छे ढंग से सिखाए जाने पर, मैं कताई सीखना पसन्द करूंगा।

२६. मुझे कताई बहुत अच्छी लगती है।

२७. मैं कताई इस लिए पसन्द करता हूं, क्योंकि मेरे अध्यापक कहते हैं कि कताई सीखनी अच्छी है।

२८. मेरी समझ में कताई से हमें कोई लाभ नहीं।

२९. यदि मुझे पाठशाला का कार्यक्रम बनाने का अवसर दिया जाय, तो मैं कताई को एक विषय के रूप में स्थान दूंगा।

३०. मैं कताई नहीं करना चाहता, क्योंकि इससे मुझे अन्य बिषयों में कमजोर होंने का डर है।

३१. मुझे कताई पसन्द नहीं, क्योंकि मेरे माता-पिता या अन्य सम्बन्धी कहते हैं कि इससे कोई लाभ नहीं।

३२. मुझे कताई से न तो किसी लाभ की आशा है, और न ही किसी हानि की।

३३. मेरा सुझाव है कि हमारे पाठ्यक्रम से कताई हटा देनी चाहिए।

An Evaluation of the Junior Basic Teachers Training Programme in the Punjab.

By S. M. Bhargava

Need for the Study :

There are about 80 Junior Basic Teacher Training Institutions in the Punjab. Some of them are Government Institutions and others are privately managed. A few of them are independent institutions, and the others are attached to high schools and training colleges.

There is a feeling among teachers in general and educationists in particular that the standards of teacher-education are not at all up to the mark. This has happened due to mushroom growth of ill-equipped, poorly staffed training institutions. Their methods of instruction are stereotyped and out-moded.

The charges are very aggressive. The present investigation was undertaken to have a true perspective of the prevailing conditions in the training institutions of the Punjab and to gather opinions on the Two Years Teacher Training Course which was introduced in the Punjab in April, 1957.

The Procedure :

To collect the relevant information questionnaire-technique was used. Two questionnaires were devised one for the Heads of the training institutions and the other for the trainees. The former was made detailed and comprehensive and the latter quite brief.

The following are the main fields on which the information and opinions were sought.

(a) General :
  (i) Type of the Institution.
  (ii) Financial condition.
  (iii) Equipment : Hostel, Library, Subject-rooms, Farm, etc.

(b) Selection of the trainees.

(c) Staff.

(d) Instructional Work :
  (i) Teaching of theory.
  (ii) Teaching skill.
  (iii) Teaching of Craft.
  (iv) Teaching of Physical Education.

(e) Co-curricular activities and comm nity work.

(f) Methods of making internal assessment.

(g) Follow-up studies and Inservice training.

(h) Opinions on curriculum, duration of the courses, etc.

One questionnaire (meant for Heads) and 3 to 9 questionnaries (meant for trainees)—depending upon the number of units, were sent to all the training schools in the Punjab. The Heads of the training institutions were requested to get the second questionnaire filled by the second year students of the Junior Basic class. Secondly, the students selected must be representatives of three classes of students *viz.* bright students, average students, and weak students. 65 out of 80 institutions responded. 64 Heads and 340 trainees' responses form the basis of the present study.

Type of institution	No. of institution	No. of Heads	No. of trainees
Government Institutions for boys . .	14	14	92
Private Institutions for boys . . .	23		74
Government Institutions for girls . .	1	13	124
Private Institutions for girls . . .	14	14	50
TOTAL .	65	64	340

It was thought necessary to follow up the responses. It was decided to visit some of the training institutions so as to get the first hand knowledge of their working. The investigator visited thirty-one training institutions.

Findings & Recommendations :

The received responses were analysed and the following have been the findings. The relevant recommendations have also been made.

I. (a) Only 63 per cent of the girl schools are residential ones. Nearly 70 per cent of the students live in hostels.

(b) 73.4 per cent of the training institutions provide library facilities to their trainees. 90.6 per cent of the institutions do not contribute to any of the professional magazines. Only 15.9 per cent of the institutions have trained librarians on their staff.

Recommendations :

1. It is recommended that the education department should draw up a list of 'essentials' ; the institutions which do not possess these, should be closed down at once.

2. It is recommended that all the training institutions must be residential ones.

3. (i) Each institution must have a well-equipped library.

(ii) Each library must contribute to some of the educational journals.

(iii) Each institution must have a trained librarian on its staff.

II. (a) There are hardly three to four applicants per seat.

(b) 9 per cent of the trainees have six months or more than six months teaching experience prior to their joining the training class.

(c) Only 19.7 per cent of the trainees are first division matriculates. 12.1 per cent of the trainees have studied beyond matriculation level.

Recommendations :

1. In order to select suitable candidates for teacher training a three-day camp be organised and the candidates be seen in a co-operative life.

III.(a) Government institutions—not attached to high schools or colleges are the best staffed whereas training classes attached to privately managed high schools are the worst.

(b) In 90.5 per cent of the training institutions attached to high schools, the teachers have to take periods in the training classes as well as in the high classes.

(c) 45.7 per cent of the training institutions are without agriculture teachers and 45.3 per cent of the institutions are without science teachers.

Recommendations :

1. The teacher should not be required to teach more than two theory papers. As far as possible, the two papers should be related to each other.

2. Each teacher-educator should be M. A., M.Ed. The teacher-educator must have also undergone some basic training.

3. No teacher-educator should be required to teach a subject which has not been studied by him at the college level or in his training class.

IV. (a) 70.4 per cent of the Heads, 86 per cent of the trainees' feel that the curriculum is heavy.

(b) Syllabii of General Science and Mathematics are very difficult.

Recommendations :

1. The students must be given practical training in the organisation of schools, class libraries, in maintaining school records, registers, and in organising co-curricular activities.

2. The teaching practice should be at least of three weeks' duration.

3. The trainees should be encouraged and guided in framing administering, and scoring achievement tests.

V. (a) 25 per cent of the institutions arrange seminars for their trainees ; 31.3 per cent have the tutorial system ; 84.4 per cent have the provision of group discussions and 53.1 per cent give individual attention to their trainees.

(b) 21.9 per cent of the training institutions are without art and craft teachers.

(c) 45.3 per cent of the training institutions have practising schools attached to them.

(d) The demonstration lessons are usually held on the eve of teaching practice.

Recommendations :

1. As much literature of good quality on education of basic teachers is not available, provision for group discussions be made in the training schools.

2. In the training institutions expert artisans or craftsmen be employed to give craft training. Local artisans may be utilised, if necessary.

3. In view of diversity of pupils' interests as far as possible variety of crafts be provided for.

4. Each training school must have a practising school of basic type attached to it. The staff of the practising school must be basic trained.

5. Whenever the teacher-educator feels that the trainees are committing mistakes in delivering lessons, he may organise demonstration lessons.

6. Two or three institutions may buy the costly equipment *e.g.* tape-recorder, epidiascope on co-operative basis.

VI. (a) 86.0 per cent of the Heads and 70.0 per cent of trainees are in favour of the practice of internal assessment.

(b) 86.8 per cent of the institutions base their internal assessment on monthly or quarterly tests; 36.0 per cent, on assignments and in 18.3 per cent institutions impression marking is also done.

Recommendations :

1. The assessment be sent to the department quarterly.

2. The internal assessment made by subject teachers must be reviewed and discussed by the board of teachers with headmaster as the chairman.

3. Internal assessment should count towards the success of the candidate but not towards assessing division.

VII. (a) 93.8 per cent of the training institutions take their trainees on educational excursions. 20 per cent of them, four times during the course ; 20 per cent, three times; 33.3 per cent, twice; and the rest, once only.

Recommendations :

1. Every training institution should develop a rich programme of co-curricular activities including assemblies; dramatics, debates, social activities, special celebrations.

2. Excursions should figure in the school calendar as a regular activity . A good practice would be to reserve every alternate Saturday for excursions and educational visits.

3. The training school should take up constructive projects *e.g.* making a road leading to the village or project or improving the drainage system of the village.

VIII (a) 8.1 per cent of the institutions follow-up the trainees ; 14.5 per cent ask for reports for the trainees about their work ; 11.3 per cent arrange occasions for informal meeting of the teachers and the students who had training from that institution ; 22.6 per cent of the institutions have old students associations and 4.8 per cent arrange for inservice training.

Recommendations :

1. The training institutions should organise 'Evening Study Circles' for the teachers, and they may arrange lectures on education for the teachers in service ; may arrange workshops, seminars, summer camps in the long vacations.

2. Every teacher should be called upon to attend summer camps at least once in five years.

3. The teacher-educators should carry on some activities of the 'Follow-up' programme which do not call for any expenditure.

IX. (a) Most of the trainees come from poor or below average families. They find it difficult to meet the expenses of the training.

(b) The trainees are not sure of getting a job after training.

Recommendations :

1. No fees should be charged in training schools. During the period of training all the student-teachers should be given suitable stipends by the State ; the teachers who are already in service should be given the same salary which they were getting.

2. The Government should see that each school gives the regular grade to its teachers and appointments are made on merit.

Construction of a Test of Computational Arithmetic

By S. L. Kaushish

The need and purpose of the present study :

The position of supply and demand of clerks in the labour market of India, today, is highly unbalanced. In Delhi Employment Exchange, upto March, 1959, the total number of registered candidates was 19,000 out of which 14,000 wanted clerical jobs. On account of this mad rush towards clerical jobs, the need of measurement of clerical aptitude is emphasised. Mere interview with the candidates and their academic qualifications are no criteria of a good selection. Hence, the need of clerical aptitude tests.

While in western countries particularly in U. S. A. a number of clerical tests and battery of tests have been prepared to measure the clerical aptitude, India is lagging far behind in this respect. Barring a few sporadic attempts at adaptations of foreign tests to Indian conditions, no successful attempt has, so far, been made to prepare a valid and reliable test or battery of tests of clerical aptitude.

The present attempt is but a modest beginning of fulfilling the need of a dependable battery of clerical aptitude tests. A clerk is obviously required to perform a variety of functions of which filing, drafting, typing, taking dictations and computational work are the main. Naturally a battery of tests is incomplete if it does not include sub-tests on all these. Efforts have not been made here to take in hand a very ambitious undertaking. To prepare a valid and reliable test of computational work is all that is aimed at for the present.

Statement of the problem :

The present problem involves administering and evaluating a list of computational arithmetic to a sample taken from the population of those boys of urban Delhi schools coming from three streams: Commerce, Science and Humanities who after passing Class VIII have come to Class IX.

The test used here was prepared by the Central Bureau of Educational & Vocational Guidance.

The test contains the following five parts :—

1 Addition	
2. Substraction	12 sums
3. Multiplication	12 sums
4. Division	13 sums
5. Simple problems based upon these four	13 sums
	15 sums

Every section has been given one page in the test. The test aims at judging the speed and accuracy in computational work. Total number of questions is 65 and maximum time allowed is 45 minutes.

Administration and scoring of the test :

The test was administered to a total sample of 420 boys comprising 140 each from literary, commerce and scientific groups. Scoring was simple. One mark was assigned to each correct response—thus eliminating any problem of subjectivity. No correction formula was used.

TABLE I

Sl. No.	Name of the School	No. of boys taken from Literary group	Scientific group	Commerce group	Total
1		..	..	26	26
2		47	..	43	90
3		..	..	33	33
4		22	32	..	54
5		48	..	..	48
6		23	..	..	23
7		..	41	..	41
8		..	35	..	35
9		..	32	..	32
	TOTAL .	140	140	140	420

TABLE II

Sl. No.	Groups	Mean	S.D.
1	Literary	47.18	7.89
2	Scientific	48.98	8.28
3	Commerce	52.64	5.37

Then the reliability of all the means and Sds. was tested.

Next step was to test the significance of difference between the means. Table No. III gives the C. R. of each pair and the level of the significance of difference.

TABLE III

Sl. No.	Groups	C.R.	Significant at
1	Scientific and Commerce . .	4·39	.01 level
2	Literary and Commerce . . .	6.77	.01 level
3	Literary and Scientific . . .	1.86	not significant.

In order to make the results thus obtained more dependable, it was found necessary to ascertain the dependability of both the population on which the test was administered as well as the test itself.

In the case of the former, skewness and kurtosis were calculated. Table No. IV shows the skewness and kurtosis of the three groups.

TABLE IV

Sl. No.	Groups	Skewness	Kurtosis
1	Literary	—2.02	.257
2	Scientific	—1.17	.302
3	Commerce	—0.89	.307

The definite negative skewness shows that there is a concentration of scores on the right side of the curves. It shows that the test may be having too many simple items.

In order to find out the dependability of the test itself, the test was item analysed. It was found that pages 1 to 4 having items on addition, subtraction, multiplication and division are too easy for the grade being tested.

As for page 5 of the test containing problems on four fundamental rules, the items were found satisfactory.

Conclusions :

From the results obtained, it may be safely concluded that sums on pages 1 to 4 of the test are to be entirely modified while the sums on page 5 may be retained as it is. As for the sums on pages 1 to 4, the investigator is of the opinion that items on simple addition, subtraction, multiplication and division are too easy for the boys who have passed Class VIII and they fail to measure their computational ability satisfactorily.

Suggestions :

A few suggestions may however be made in the light of the above findings :

(1) There should not be so many items on simple calculations based on four fundamental rules as to cover four-fifth of the whole test. While one cannot do away with them altogether, in a test of judging computational ability, their number may usefully be reduced to one half of the present and the items may be of a more difficult nature.

(2) The inclusion of more of problems just like those on page 5, of course of a longer variety is also desirable.

(3) The third suggestion that the investigator has to make is regarding preparing tests also on drafting, typing, shorthand etc. which are so necessary to judge the clerical aptitude, when all such tests are prepared, the complete battery should be standardised as to make it a valid and reliable measure to judge the clerical aptitude.

(4) Women workers are also coming in the clerical field. In some countries they are proving to be more efficient hands in office work than men in some respects. It will be, therefore, useful if the test is extended to women population also.

An Investigation into the Social Adjustment of the Blind.

By U. Vasudev.

Introduction:

Life is a continuous process of adjustment. Adjustment implies a satisfactory adaptation to the demands of everyday life. Social adjustment means the 'patterns of the modes of response built up by the individual with respect to his social environment and evaluated in terms of the standards of his culture group as acceptable, desirable or successful'.

Blindness is a physical condition. Social adjustment is much more important for the blind than for the sighted. He is to make a conscious effort to adapt himself to the society not of his own making.

Twenty lakhs blind people in India are almost condemned to a life full of darkness. The gross neglect now accorded to the blind and the transition from the present stage of humanism to integration make it imperative to study the social problems confronting them and to find a solution for their social rehabilitation.

The problem of Investigation :

The purpose of the present investigation is primarily to make a comparative study of the social behaviour of the blind and the sighted adult and the nature of the social problems of the blind adult.

Secondly, the purpose is to study the factors that give rise to these problems and the practical suggestions by which the blind can be helped to cope with these problems effectively.

The problem was delimited to the study of :

(1) Social adjustment of the blind adult in Delhi.

(2) Only men were taken for the present study.

(3) The blind men were taken from the working population.

(4) Totally blind men were taken for the study.

The Procedure of the Present Study :

An abridged form of Washburn's 'Social Adjustment Inventory' was used. There are seven sub-tests, namely, Truthfulness, Happiness, Alienation, Sympathy, Purpose, Impulse-Judgement

and Control. The total number of questions in the questionnaire is 55.

The questionnaire method was supplemented by 'case-study' for an understanding of the social-problems of the blind.

Sampling :

Questionnaire was administered to only 50 Blind and 50 normal adults.

Case Study was made of only 5 Blind men; two, who scored the lowest scores ; two, who scored the highest and one, who scored an average, were selected for case history.

Administration of the Questionnaire :

The questionnaire was administered orally both to the blind and the sighted, as quite a number of the blind adult could not read and write Braille as also many of the Sighted could not read and write. The questionnaire was administered individually. They are asked to give their answer in 'yes' or 'no'. The answers were taken down by the investigator. The questionnaire was administered in Hindi.

The Procedure of Case Study :

Since the emphasis in the problem is adjustment in relation to the work, the working conditions, fellow workers and the employer, the data collected in the case-history were as follows : identifying data, nature of the social adjustment, environmental forces which affected the individual's behaviour, father, mother, sibling inter-relationships, methods of control and supervision, educational factors, recreational factors, reactions in early childhood and adolescence.

The sources of information was the subject himself, co-worker and the employee.

Analysis an Interpretation of the Data :

Although 50 subjects might be considered as too small a number for a sample, it can, however, be regarded as a representative sample of the blind adult men in Delhi as the investigator included in the study all the blind men available in the workshops and in the schools for the blind in Delhi.

The scores on the questionnaire range from 26 to 46. The following tables show the number of blind and sighted subjects at each level of adjustment.

TABLE I

The Number of blind subjects at each level of adjustment

Levels	Score range	No. of subjects	Percentage
Superior adjusted	44—49	1	2
Well adjusted	38—43	31	62
Normal	32—37	12	24
Low normal	26—31	5	10
Mal adjusted	20—25	1	2

Mean Score—38·62.

TABLE II

The Number of sighted subjects at each level of adjustment

Levels	Score range	No. of subjects	Percentage
Superior adjusted	44—49	4	8
Well adjusted	38—43	21	42
Normal	32—37	17	34
Low normal	26—31	6	12
Mal adjusted	20—25	2	4

Mean Score—37·78.

The mean scores show that the difference between the blind and the sighted is not significant on the social adjustment. Similar results were arrived at by Hastings : He administered 'California Test of Personality and Mental Health Analysis' to 116 blind and 358 seeing children. He found that the difference on the social adjustment of the blind and the sighted were not significant.

A word of caution may be given before this conclusion can be regarded as a generalisation. Social adjustment is relative to race, community in which one lives, groups with which one associates and the particular situations in which one finds himself. The blind persons on whom the study was made, lived in a more or less homogenous group. With the result that their problems of adjustment were not quite as acute as would normally be the case in a non-homogenous group.

Perhaps the best way to compare the level of social adjustment of the blind and the sighted might be to study a mixed group of the blind and seeing workers in a similar environment. In such event, it is quite possible that the results might be different. It is likely that the blind who have necessarily to face many more social frustrations might show a lower level of social adjustment than the sighted. At the same time it is quite possible that the blind who make a very conscious effort to adapt themselves to a society of the seeing might show the same or perhaps a slightly higher level of social adjustment. This is, however, a question to be decided by a future study.

The common problems as revealed by the case studies are as follows :

(1) Parents discriminate against the blind child.

(2) The sighted ignore the blind, look down upon them and regard them as helpless.

(3) The attitude of the sighted is apt to give rise to a feeling of resentment among the blind.

(4) Natural limitations of blindness give rise to the following:

A. Types of social problems:

(1) Lack of mobility.

(2) Small sphere of social contacts.

(3) Limited vocations.

(4) A serious restriction on his ability to read.

(5) Limited interests, hobbies and recreations.

B. Nature of limitations imposed by the attitude of the sighted towards the blind are as follows :

(1) The sighted have no confidence in the ability of the blind.

(2) The sighted regard them as mentally retarded.

(3) The sighted do not even offer them an opportunity to work along with them.

(4) The sighted regard them as unable to contribute anything substantial to the socio-cultural life of the community.

Summary and Findings :

The results revealed no significant difference in the level of the social adjustment of the blind and the sighted.

Practical Suggestions :

The suggestions to pave the way for better social adjustment of the blind are as follows :

(1) To provide the right and intensive public education.

(2) To promote more contacts between the blind and the seeing at all levels, in varying environments and situations, and

(3) to facilitate the training of the blind.

A Comparison of Strong's Vocational Interest Scores and Kuder Preference Record Scores for the XIth Grade Students of Delhi Schools.

By V. P. Anand

Purpose of study :

The measurement of interest is important for determining individual differences in children. The present research is a humble attempt to explore into the major interest areas of Delhi Higher Secondary Schools boys and girls of the 11th grade. The tools that have been used here for interest measurement are :—

1. A modified questionnaire of SVIB for men & women,

2. and verbally simplified version of Kuder preference Record with an adopted method of scoring.

The present study only alligns itself with matter of fact statement life "what are interest","what role do they play in individual life", "what is their status in educational measurement and vocational psychology", "how are they measured" and "what is the functional importance of interest in 'vocational maturity *inter alia* vocational development' ", as well as the differences in interest-patterns of school boys and girls.

Interest bespeak themselves whenever a counsellor or a teacher or a vocational guidance is beset with his armour of mental testing to make a prognosis of a higher or low achievement or vocational fitness of frustration. There is no fool proof instrumental mechanism that a teacher or a guide can ever resort to for prediction of human success or failure. Yet all hope may not be abundant. The entire rubric of uses of interest measurement justifies it as a good device for gathering important information about the individual mental equipment.

Design of Study :

The comparison of the scores on the modified strong VIB and simplified Kuder's inventory runs on the thread of qualitative analysis. The quantitative analysis is made only in a rudimentary form shorn of so much cherished statistical elegance and is restricted to the measure of central tendency like arithmetic mean, of the each interest area of Kuder's inventoried findings both for art and science groups among both males and females.

The two interest inventories were administered to a sample of 200 boys and girls of 3 Delhi Higher Secondary Schools.

The sample of 200 was of the nature of 'randon' one in the sense of individual's abilities and level of achievement. But the sample might lose much of its claimed 'randomized touch' if viewed from the socio-economic background of the schools' boys and girls. Not that the socio-economic status of all students tended round a cluster, but that there was not a big range and the scope of variability with glaring examples of deviation not many. Between the two boys' schools there was not much difference, though it shall be difficult to imagine them alike. From both boys and girls two groups were chosen. These were :

(1) Science Group

(2) Arts Group

(Sometimes including a few commerce students, particularly in M. B. H. S. school rouse Avenue.) Out of 200 students the actual number rolled down to 168 because of 'drop-out' cases due to absence of the students on the second occasion when the second inventory was administered.

Field of experiment and the administrative procedure :

As mentioned earlier in the beginning of this chapter, a randomized sample of boys and girls in virtue of abilities, and level of achievement was taken from three different schools for boys and girls. The common number of students to whom both the inventories were administered ran up to 168.

Sample size :	168
Girls :	86
Boys :	82

The modified version of SVIB was actually administered to 100 boys and 100 girls, but the same number of students could not be administered with the Kuder's simplified form because it was administered on another occasion when some students were absent from schools.

It is well nigh essential while mentioning the administrative procedure of these inventories to present the process how special techniques of administration were evolved. Two "trial administrations" of each inventory were given to a group each of 50 boys and 50 girls. The trial administration concerned with the original forms of both the inventories. The main idea behind this was to acquaint with the specific difficulties that had to be encountered and how their solutions could be had. It was discovered through trial administrations that it was difficult to administer such in-

ventories to a large group as the students sought the help of the author at regular intervals, regarding the meanings of the words or the import of the items to be answered.

In using these on a large group another disadvantage lay in the inattentiveness of the respondents and lack of quiet atmosphere in the class rooms. This disadvantage was removed partially by taking the help of the classroom teacher. The only alternative left was to administer these inventories to a lesser number of students at a time. As such it was thought that these may ideally be administered to students ranging between 10 to 15 in a group at a time so that ideal conditions for test administration could exist. This procedure was actually followed and it held a great promise. As such, it may be safely surmised that these inventories, though group tests, could be ideally administered to individuals alone by themselves. A golden mean may be struck, as was done, at administering these to a smaller group of 10 to 15. The author feels inclined to call these inventories as—

"*Small group tests*" and not large group tests. Another advantage which spoke for trial administration was revealed during its administration very useful cases were obtained during trial administration for modifying and simplifying the inventories. The modification of both male and female forms was made on Strong's VIB. Only 3 groups of items were retained. These are:—

(a) 'Occupations' group,

(b) 'Subjects' group,

(c) Amusements group.

The fourth item which was included on the title page was that of vocations, the students shall like to pursue after their studies, and one could give two choices for the same in order of preference. This item was included to know how far the aspirations and interests of students did match with each other.

With the Kuder test, the self-scoring system achieved by pinning through left or right of most liked and least liked activities had to be abolished because of its exceedingly high cost of printing. Instead the students were instructed that they should tick the left of the item on the corresponding column on the scoring sheet attached with if they liked the activity the most and tick to the right of an item on the scoring sheet for an activity they liked the least.

For the modified version of SVIB, the students were told to draw a circle round L, I or D standing for Like, Indifferent and Dislike respectively. If they liked an activity, they had to draw a circle around L, if they disliked an item, they had to encircle D, and if they were indifferent, they had to put a circle around I.

The total number of items in M Form of SVIB was reduced from 400 to 143.

The total number of items in W Form of SVIB was reduced from 400 to 146.

In the Kuder test, words like acquarian, orchestra, ranch, organist, Browse were rendered simpler or their meanings were explained in written or oral way. The original list of meaning of words given with the Kuder for consultation was increased in the light of the vocabulary of the students gauged from the trial administration of these tests.

Moreover, for simplifying further the procedure, the students were instructed to skip over some of the items which they did not understand. It had to be resorted to under the conditions available. The instructions for skipping over unintelligible items was deliberately made so that the students do not tick wrongly in a state of confusion which could have spelt assessing interest wrongly.

The simplified version of the Kuder Test is also attached in the Appendix.

The actual administration of these inventories was completed on 24 occasions, 12 for each. There was no time limit for answering these inventories. The age range of boys of 11th grade was from 15½ to 18 years. The age range of girls of 11th grade was from 15 to 17 years.

Special Observations :

(1) It was discovered that some of the students were cases of indiscipline and that they would tick the items or put a circle round them (as the situation demanded) in a whimsical manner without paying any regard to any understanding of these. They just ticked the items as they pleased. The diagnosing of such cases—the victims of lack of interest for taking such tests—was made easier because of a smaller group of students being administered at a time. There were only a few such cases lying in the vicinity of half a dozen or a little more. These students were later on administered the test individually where a more personal contact with the author was promised. The things were explained to them in greater details along with their significance and it facilitated the matters for them.

(2) There is a general resentment found in the minds of students against taking any sort of mental test. With the help of the teaching staff, and deeper explanation about 'what' and 'why' of these inventories, a responsive attitude from the students was elicited. The system of administration to smaller groups proved useful, as it created better understanding between the students and the investigator.

(3) It was observed that the respondents found it tiring to answer Kuder's inventory because it contained 504 items given in the shape of 14 groups of 3 items on 12 sheets. They looked aghast on finding 504 items to be responded to. It is really a laborious task. Such a difficulty was not found in Strong's modified version because the total number of items to answer being 143—146 was much smaller. It was noted that the students felt happier with the latter inventory.

(4) On the whole the students from the Science Group (both boys and girls) took the tests more seriously, though some of the students from the Arts group were also found genuinely interested.

(5) The students were generally keen to know the results of these tests. The results may be handed over to the school authorities if they be so interested. For example the teacher of M.B. Rouse Avenue School were keen to get the results because they have a sort of cumulative record system, though only in partial truth.

Interpretation:

Interpretation of Kuder scores:

(1) More than 70 per cent of women both in Arts and Science group opted for the out-door interest area whereas the boys score of 24 per cent in science group and 17 per cent in art group is almost negligible as compared to that of women. The present studies show that women have far greater interest in out-door or field work than men.

(2) In the mechanical area of interest the science group both of boys and girls have scored high though the girls have scored even higher than boys. The girls mean percentile scores in this area is 69·46, whereas the arts group boys 9·18 which is rather insignificant. The arts group of girls had the mean average of 62·61. This is very significant because it is even higher than that of boys in science group. It is really very difficult to explain why it is so.

(3) In the computational area the arts boys have opted the maximum though the girls from arts group have also scored high. It is difficult to explain why such high number of girls especially from the arts group opted for this. The score of science boys which is 60·25 percentile is quite understandable.

(4) The girls from both arts and science groups have opted highly for the scientific area whereas only 47·84 of mean average from boys science group have opted for this. This should have been a little higher. It only indicates about more than 50 per cent of science boys do not feel happy in the choice of their subjects. The lower scores of 7·55 is from the boys from art group which indicates

that most of them are happy in their choice of subjects. It is all the more clear that when we find that the boys art group have opted the highest *i.e.* 91·24 for literary area of interest.

(5) In the pursuasive interest area the girls both in arts and science group have scored high. The science group boys have scored 7.00 percentile in average.

(6) In the artistic scale boys from both arts and science group have scored higher than girls from both the groups. The girls from science group have scored 21·6 percentile and is obvious that due to their scientific interest, they are not much interested in artistic activities. The high score of 65·50 percentile of science boys in artistic activities reveals that their choice of subjects is not happy one.

(7) The arts group both boys and girls have scored very high in literary scale. The score of science girls is low for literary interest area. They scored 36·08 which is a satisfactory one.

(8) Both boys in arts and science group even in a musical scale score higher than both the arts and science girls. The science girls scored 22·92 which is good showing according to their option for scientific career.

(9) In the social service scale the arts group including boys and girls have scored higher than the science group. Science boys scored the least in it with the mean average percentile of 17·07. Arts group girls scored much less than the arts boys whose mean average percentile is 62·52.

(10) In the clerical area boys from both arts and science group have much higher mean percentile than the girls from both the groups. The boys percentile in arts and science group is 67·67 and 41·70 respectively and the girls percentile is 22·06 and 11·11 respectively.

Interpretation of scores on modified SVIB:

Amusements liked by the most of the boys in arts groups were hunting, picnic, sports pages, detective stories, making a radio set, while the table for science boys amusements reveals that the science boys like very much the items such as tennis, driving and automobile, solving mechanic problems, collecting postage stamps, sports pages, detective stories. The common significance likes between the arts and science boys were picnics, sport pages etc.

The common elements of likes in amusement between arts and science group of girls were swimming, tennis, museum etc. The common dislikes among the girls, arts and science group, was

only fortune teller. The arts boys showed a great liking for subjects such as Arts, Economics, History while the arts girls had a liking for Arts, Domestic Science, Dramatics, English composition, History etc. The science girls have liked most the occupation such as artist, author of children's novel, biologist, inventor, judge. The corresponding scores of this group from Kuder is 49·46 for mechanical, 47·08 for scientific and 21·01 for literary areas, but invariably this group has shown their preference for vocation such as medical doctor, engineer etc. very consistently in the like columns which was filled by them in the inventories. The science group boys had the greatest liking for army, aviator, civil engineer, electrical engineer, marine engineer, mechanical engineer. This shows that they seem to possess mechanical and scientific interest very high. This tallies with this group corresponding scores of Kuder inventory which stands 65·05 mean percentile scores for mechanical and 47·08 for scientific area.

In general it may be said that the option for the vocations in science groups both boys and girls have been consistently showing the scientific trend, but it is quite inexplicable that both girls and boys for art group have too often aspired to be medical men and engineer and so on. It may also be mentioned that some students gave the vocational choice that of leadership by which the students may have actually meant as statesman or politician. It is inconceivable how leadership is a profession unless it is delimited in some field or another. This only reveals that the social climate of our country considers or so imagines leadership as profession. Lastly, it may be mentioned here that the method of determining of high frequency of likes and dislikes was on the basis of 50th percentile.

Conclusions :

(1) The SVIB and Kuder cannot be accepted *in toto* as the occupational scene in India is different from U.S.A. for which these inventories have been devised. Also so because socio-economic condition and cultural background is different in India. On the basis of this study it is recommended that the simplified version and the shorter form may be very useful here to begin with. A series of graded inventories for different stages may be devised.

(2) The three modified item groups inventories used in this study can be further simplified in the light of the above mentioned suggestions.

(3) Kuder's test can be modified and rendered much simpler on the basis of some occupational analysis that is done in India. On the basis of this study a further research into item analysis of Kuder inventory can be undertaken for its modification.

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